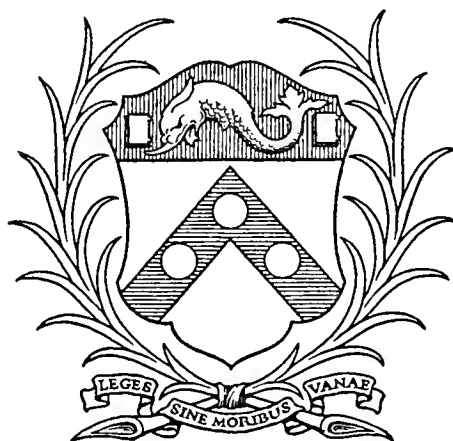


THE LIBRARY CHRONICLE

of the Friends of the

UNIVERSITY OF PENNSYLVANIA
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VOLUME XVI

FALL 1949—SUMMER 1950

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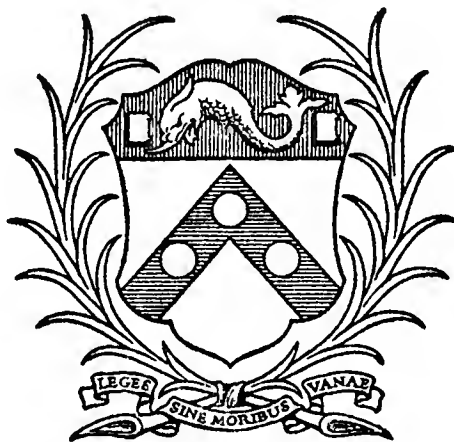
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JOHANN WOLFGANG GOETHE

Die guten Leutchen wissen nicht, was
es einem für Zeit und Mühe gekostet,
um lesen zu lernen. Ich habe achtzig
Jahre gebraucht, und kann noch jetzt
nicht sagen, dass ich am Ziele wäre.

—*Goethe*

The Friends of the

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THE PRESENT ISSUE OF THE
Library Chronicle
COMMEMORATING THE
BICENTENNIAL OF GOETHE'S BIRTH
HAS BEEN EDITED BY
Rudolf Hirsch

GOETHE IN THE MODERN WORLD

*Ernst Jockers**

IN a memorable address delivered at Frankfurt on the occasion of the presentation of the Goethe Prize in 1947, Karl Jaspers, the Heidelberg existentialist philosopher, subjected Goethe to a scrutinizing search, describing not only Goethe's limitations but also the dangers emanating from his influence. He admits that we can learn from Goethe how to regain our spiritual self, how to tolerate other men, how to concentrate on essentials and how to overcome confusion, but on the whole "his world is dead." It does not provide the spiritual means with which to master the complex problems of our technical age. His humanism, in which Jaspers sees not much more than the cult of an esthetic individualism, has no "regenerative power."

I have no intention of refuting in detail all the accusations of this distinguished scholar, but I cannot refrain from challenging him on the main issue, namely, the question of whether Goethe's world is really as dead as Karl Jaspers wants us to believe. It seems that the best way of doing this is to give an unbiased appraisal of the Goethean world, to show which parts of it belong to the past and which live on in the present or have meaning for the future.

Goethe's world is first of all a reflection of his time. This time is not a harmonious whole, but a panorama of conflicting tendencies which may best be characterized by the philosophical movements predominating in it. Goethe was no philosopher in the strict sense of the word. As he once said, he had "*kein Organ*" for philosophy as such. He was averse to abstract thinking and could never reconcile himself to the analytical dissection of the object, the *Gestalt*, with which he as an artist was chiefly con-

* Address delivered at the University of Virginia on its commemoration of the Goethe Bicentenary, April 29, 1949.

cerned. Nevertheless he was profoundly interested in understanding the interpretation of the universe by original thinkers like Plato, Aristotle, Plotinus, Giordano Bruno, Leibniz, Spinoza, Kant, Schelling, men from whom he willingly accepted whatever he could assimilate. For this reason and due to the fact that purely economic or political affairs were only of minor interest to him, it seems justifiable to analyze the character of Goethe's world in terms of its leading philosophical currents which even a less philosophical mind than Goethe's could not escape.

In all, there are five such movements. The first is Rationalism with its popular adjunct, Enlightenment. It manifested itself in a dual form: moralistic-theological and sensualistic-esthetical. Leibniz, Christian Wolff, Gottsched, Mendelssohn and Lessing belong to the first, Baumgarten, Tetens and the famous Winckelmann to the second category. The rationalistic movement, proudly represented by Gottsched and Gellert when Goethe studied at Leipzig, dominated the whole first half of the eighteenth century and received its deathblow from Kant's *Kritik der reinen Vernunft* which appeared in 1781, the same year that Lessing, one of its staunchest adherents, closed his eyes.

The moralistic tendency as such never affected Goethe deeply. Leibniz interested him as a cosmic thinker whose optimistic *Weltanschauung* on the harmonious cooperation of the monads leading to an ever-increasing clarity appealed to his own mental disposition. Wolff was much too systematic, and Gottsched too narrow-minded to appeal to him. Lessing, the fighter for religious tolerance, was highly respected; the dramatic architect was praised, but the poet Lessing had little or nothing to offer Goethe's stormy soul. On the other hand, the rationalistic delight in sophistic subtleties can be felt in the letters which the young student wrote from Leipzig to his sister and friends, while the sensualistic amorality found its way into the *Leipziger Lieder* and that uncannily realistic presentation of Leipzig's family life, *Die Mitschuldigen*. More cannot be said of rationalistic influence. Rationalism, as the insistent attempt of pragmatic intellect to control all aspects of life, was foreign to Goethe's nature. If it had some slight effect upon him at Leipzig he soon discarded it as a stifling element. When he left for Strassburg in 1770, all

traces were dead and were never revived except in later years as a dietetic device to keep a certain order in his many-sided activities.

Quite different is the second philosophical movement which for want of a better name we may call Irrationalism. In its beginnings it runs parallel to Rationalism with which it fights shoulder to shoulder against the new dogma and hierarchy of the Lutheran Church. In the late sixties, and especially in the seventies, it steps forth in violent opposition against its former ally, thus becoming the strongest pre-Kantian force in the final overthrow of Rationalism. Irrationalism is also a complex movement; there are at least three, in many respects contradictory, tendencies subsumed under this general denominator. All three, however, agree in their emphasis on feeling and imagination as the creative forces in man. All three are given to passion, even exaggeration. These tendencies are Pietism, with Spener, Francke, and Arnold as its main exponents, Rousseau's philosophy of nature and society, and Jacobi's philosophy of feeling and belief. Next to Rousseau, whose social and political gospel of democratic freedom swept over the whole of Europe like a spring storm, the Pietists, or the *Stillen im Lande*, as they were contemptuously called, had the deepest-reaching effect. They appealed directly to the souls of men and their longing for a more intimate relationship with the divine than the dogmas of the church would permit.

It is this deeply religious urge which differentiates the German *Sturm und Drang* from the general European *Geniemovement*. It gives the works of young Goethe their tremendous appeal, creating for him a popularity which he never again enjoyed in his life, not even through his *Faust*.

Do Goethe's works of this period have the same appeal to us? Do they convey a message to our world and, especially, are the characters presented in them and the treatment they receive from their author still acceptable? Let us briefly look at some of their outstanding figures. Götz breaks his promise to keep peace with Bishop and Kaiser because one of his boys is imprisoned by the prince of the church. Weisslingen denounces his friendship with Götz and his engagement to Maria, because he expects to be

rewarded with Adelheid's love and an important position at the imperial court. Adelheid, the scheming enchantress, plays with human hearts as coldly as she plays with the figures on her chess-board because she cannot resist her flaming ambition to become the voice behind the throne. Werther declares war against all duties of office and society and is about to undermine the peace of a happily engaged couple because he does not want to control the passion of his sickly heart. Fernando leaves wife and child to live with another woman, only to establish a convenient *marriage à trois*. Clavigo sacrifices his fiancée to his lust for power, and Faust, the irresponsible superman, destroys Gretchen and her family because his will to take is stronger than that to give.

These examples may suffice to show that, if these persons' actions are representative of this part of Goethe's world, this world may be called objectionable or even repulsive. The question might very well be raised as to what kind of man the young Goethe must have been if he delighted in presenting such "egocentric" and "morbid" individuals. To this we must say: first, that to a certain degree they reflected actual experiences in his own life of which he freed himself by projecting them into others; second, that they were symptoms of a cultural disease which springs from introspection caused by lack of satisfactory practical work; third, that regardless of all this, the writer is justified in depicting even the repugnant sides of life provided he does it with the necessary sense of responsibility.

Does Goethe have this responsibility? In other words, is his genius at this period impregnated with that ethical substance which he himself demands of "the important man"? At first sight, it does not seem so. He does not moralize and does not summon his characters before a legal tribunal. He simply presents them, following the great example of Shakespeare, as they are, distorted or extravagant creations of nature, delivering them to nature again which in turn appoints him as its judge. Thus, in the name of nature, sentence is pronounced not as a retribution for sin, but as a corrective against any attempt to upset, by action or passion, the natural balance. This sentence is cruel, heathen, primitive; no defense, no trial is granted. People are driven to suicide, to the gallows, scaffold, poison and sword where modern

justice would probably recommend mere confinement or psychological treatment. Although the poet is in sympathy with his "children," he has a higher respect for the balanced order of nature. In this respect lies his ethical responsibility. Although our modern world is full of characters like Werther, Weisslingen, Clavigo, and Faust, we reject them as dangerous to our society and approve of their removal. From a purely pragmatic standpoint they are and remain dead.

Are they dead also from a purely human standpoint? They are not, because each one of them has lovable traits despite his or her depravity. None of them is a real villain; in fact, there are no villains in the whole work of Goethe as is the case in Lessing's and Schiller's works. It is because of these human traits that we sympathize with them. We just cannot live without Werther's love for children, nature, the poor and the sick. We would be worthless without Goetzen's loyalty to his family, friends, and servants. We would be dull without Faust's thirst for knowledge and great adventure, not to speak of the purity, modesty, devotion and sacrifice of women like Elisabeth, Maria, Lotte, Gretchen and Marie Beaumarchais. If we add to all this the vigor of Goethe's poetry of this time, its depth of feeling, its cosmic breadth, we must conclude that, although the persons and conditions of this part of Goethe's world are dead, the inner world of noble motives, the poet's cool objectivity toward his persons, and his determination to resist their contagious dangers are forever alive. In these factors lies the positive contribution of Goethe's *Sturm und Drang* to our modern world.

The third movement of Goethe's world is philosophically circumscribed by Kant's transcendental philosophy, in particular by his *Critique of Pure Reason*, 1781, his *Critique of Practical Reason*, 1788, and his *Critique of Esthetical Reason (Urteilkraft)*, 1790. We single out Kant's philosophy from those of the other idealistic philosophers, Fichte, Hegel, Schleiermacher and Schelling because it is the only one which chronologically fits into the time of Goethe's classicism, and because epistemologically it is based on the same principle, namely, to restrict knowledge to the phenomenal world while leaving the supernatural to reverence and imagination. This is the meaning of Kant's famous word "transcend-

ental" which must not be confused with "transcendent." "Transcendental" is that which stems from pure reason, but is applicable only to the objective world. "Innate," *a priori*, it is directed only to the things of our sensuous experience. "Transcendent" is "innate," *a priori*, too, but always directed to the world of ideas, of which those of God, freedom and immortality stand out as guiding principles of our actions. They can never be objects of our knowledge. This transcendental method of thinking in which analysis and synthesis organically worked together was practiced by Goethe long before he had known Kant's famous work, of which he was afraid because of its strictly logical form. Convinced, however, by his friend Schiller that his artistic way of handling objects was essentially not very different from Kant's logical method, he began, in the nineties, an intense study of Kant's works, especially of the *Kritik der Urteilkraft*. How grateful he was to find his own unsystematic philosophy, and with it his classicism, sanctioned by the greatest philosophical authority is proven by his many laudatory utterances on the "*gewissenhaft, tüchtige, köstliche Mann*." Kant died in 1804, Schiller in 1805. In 1806 the *Reich* crumbled under Napoleon's heels, and it was exactly at this time that Goethe's classicism, which had started in the early Weimar period and developed in Italy, began to decline.

What is this classicism? For a long time it was merely considered as a revival of the Greek world, seen, to be sure, through the beautifying eyes of Winckelmann. As such it was not much more than a *l'art pour l'art* performance with a delicate touch of "pure humanism." In the light of such interpretation the persistent study of nature and society, which for years practically absorbed all his poetic energies, was considered only as a dilettante occupation on the side, or as an unfortunate aberration from his god-given poetic genius. Today we see in these studies on nature and society an organic complement of his literary endeavors, in short, in his classicism the trinity of nature, society and art as a comprehensive form of life intended to prepare men for their earthly duties. While in the *Sturm und Drang* period Goethe's attention was focused on the individual and the degree of difference between individuals, we find him now striving

toward that which is common to many or all individuals, the typical, the ideal pattern, underlying the endless individual varieties. Parallel to the term first used for the original plant form, the *Urpflanze*, he called this generic principle the *Urtypus*, or the *Urphänomen*. It was one of Schiller's greatest contributions to Goethe's development that he convinced him of the ideal character of this *Urphänomen*, which he seeks in botany, optics, mineralogy, in short, in all natural sciences within his intellectual reach, as well as in art, society, and in history. Thus he becomes the founder of a new science, comparative morphology, the main purpose of which is to show the development of individual forms from an ideal *Urform* by means of a constant transformation following the law of polarity. In doing so, he is led to the concept of evolution, not an evolution based on heredity, environment, and the survival of the fittest, as Darwin sees it, but an evolution through metamorphosis caused by an inner formative principle, akin to Aristotle's entelechy, or Leibniz's immanent causality. This "evolutionary process" does not continue indefinitely but comes to a stop if the pre-established potential form has been realized.

It is not my intention to go further into detail about Goethe's scientific studies or trace their survival. This is a task which only a historian of science can undertake. May it suffice to say: although his artistic approach from the vision of the whole to the individual object is the very opposite of modern experimental investigation, it remains a great inspiration for all those who like Faust wish to know "*was die Welt im Innersten zusammenhält*." For the "seeker of truth" and poet his method will always be a real inspiration. As an expression of his personality it is of lasting value for the psychologist.

How does this view of nature now manifest itself in his poetic work? Essentially, the endeavor is the same, namely, to establish types for human behavior either in the family as such, or in society as represented by nobility and the upper middle classes. Every "striving" individual must now undergo a thorough examination of his social worthiness, but there is nothing rigorous in it. It takes into consideration the peculiarities of the individual, treating them with tact, simplicity and courtesy.

Nature, art and society take part in the pedagogical process but there is a definite emphasis on the ethical aspect which anticipates the strongly religious character of the following period.

Let us examine how this principle is applied to some of the outstanding figures of the classical period. It seems only natural that those who need education most are young impetuous men, while middle-aged men and noble women, more deeply rooted in ethical ground, are actively and passively engaged in the educational work. Confidence in the original goodness of the individual is the leading principle followed by all "educators"; friendship, love, understanding are their pedagogical means.

There survive some impetuous characters, conceived during the *Sturm und Drang* period, who are unwilling or unable to learn or to change. Foremost among these are Egmont, Tasso, and Faust. Egmont, repeatedly warned against his overconfidence, remains tragically blinded and insists on following his *süsse Gewohnheit des Daseins*. In the hour of greatest danger he prefers to play instead of taking precautions to save his country. Tasso, unable to control his love for the princess, rejects the good advice of the Duke and Antonio and sentences himself. In both cases, however, the poet spares us the sight of his heroes' destruction, exercising a leniency demanded by a sympathetic society. Faust who has violated not only the social but the religious law as well is delivered to the justice of God, who cannot pronounce sentence before Faust's earthly life has ended.

The other two men, Orestes and Wilhelm Meister, are only partly imbued with *Sturm und Drang*. Orestes, redeemed from the curse of matricide by the love of his sister, is blessed by King Thoas, himself a product of Iphigenia's education. Meister, who by nature is reverent, grateful, and always willing to help, finds a whole world of friends, men and women who show him the right way to live. The higher they rank socially, the more helpful they are. The *Lehrbrief* which Wilhelm receives for life at his "graduation" is a code of natural duties toward society among which the establishment of and care for a family are foremost. It is noteworthy that the marriage between Wilhelm and Natalie is symbolical of the necessary fusion of the two leading social classes, the bourgeois and nobility, to overcome revolution.

It is well known that Goethe hated the French Revolution. He hated it because, as an artist striving toward harmony, he was against chaos and disorder, and because as a scientist he believed in slow, evolutionary progress, not in volcanic eruptions. He did not see or perhaps did not want to see the deeper causes, the collective urge of long oppressed masses asserting itself almost periodically at certain crucial periods of history. Collectivism in any form was alien to him. During his whole life he was a staunch defender of individual rights which he wanted to see developed in harmony with society and the world at large, but never to the extent that society and state should exercise dominating power. The individual with all respect for society and state was sacrosanct. In this he never changed.

Regardless of whether Goethe understood the French Revolution or not, he saw clearly that a new era of history was dawning. Whether he anticipated modern totalitarianism nobody can say, but certainly he foresaw the destructive consequences which the Revolution (any revolution) would have on unpolitical people like the Germans. To avert these he wrote farcical comedies like *Der Bürgergeneral* and *Der Grosskophtha*, serious short stories like *Unterhaltungen deutscher Ausgewanderter* with the deeply allegorical *Märchen*, the epic *Hermann und Dorothea* and the drama *Die natürliche Tochter*, in which latter works he glorifies family and the cooperation of social classes as the firmest bulwark against the revolutionary onrush. In the *Wahlverwandtschaften* which closes the classical period, he goes further, presenting matrimony not only as a social but also as a religious institution, rooted in the law of God and, therefore, like it unbreakable. In the religious foundation of matrimony and society he believes he has found the final remedy against any revolution from without and within. The ethos of his classicism thus leads to religion.

Is it necessary to ask whether Goethe's world is dead, as Mr. Jaspers assumes? Would it not be more proper to ask whether we are yet ripe for it? Granted, Goethe's concept does not appeal to the masses. It cannot appeal to them because they are afraid of its ethical demand. They shun binding decisions which can be made only by responsible individuals, but as long as such individuals live we need not fear that Goethe's classical world is dead.

The "transcendent" philosophies of Fichte, Hegel, Schleiermacher and Schelling with their retrogression into metaphysics are in a way symbolical for the fourth period of Goethe's world, that is, the time from around 1810 to the middle of the twenties. Of course, Goethe never subscribed to Fichte's egocentric philosophy which he so ingeniously ridiculed in *Faust*, nor had he any love for the half pietistic, half scholastic vagaries of Schleiermacher. He rejected Hegel's dialectical interpretation of history, so diametrically opposed to his organic philosophy of nature. He protected Schelling as long as he could accept him as his disciple, but he turned away from him when Schelling developed into a romantic theosophist. The metaphysical urge, however, repressed in his classical period, asserted itself again with advancing age so that on one occasion he could say: "When we get old we become mystics." It is true that his realistic method of approach remained the same, but he extended it to new fields of human endeavor, such as history, linguistics, and the comparative study of literature and religious thought. In this universal tendency he could agree not only with the "transcendent" philosophers but also with the romanticists, the literary exponents of their new mysticism. At the beginning of the romantic movement, that is, in the late nineties, he observed a benevolent reserve toward the new *Stürmer und Dränger*, because to them he owed the first true recognition of *Wilhelm Meisters Lehrjahre* and with it his second popularity. Under the influence of Schiller, however, he assumed an increasingly hostile attitude. With a Napoleonic gesture he stated: "*Das Klassische ist das Gesunde, das Romantische das Kranke.*" Heinrich von Kleist, not a romanticist but inclined to romantic occultism, was reprimanded because he "aimed toward the confusion of feeling," and Novalis, who had called *Meister* "*ein banales Buch, das überwunden werden muss,*" was punished with deadly silence. In spite of all this Goethe could not escape the romantic influence, but, as always, used it only in so far as it contributed to enrich his personality. There are at least three new fields of interest which romanticism opened to him: world history, world literature, and world religion. His endeavors, formerly centering around the individual, family and society, now extend to cultural problems concerning the whole world. History,

formerly scarcely more than a struggle of arbitrary powers, is now conceived as the result of great, planning individuals such as Wallenstein and Napoleon, political *Urphänomene* which, like the *Urphänomene* in nature, create new forms through a constant, albeit unconscious, application of the polaric law of extension and contraction. It is this *grosse Gestalt* that is chiefly responsible for the historical movements, not the vague *Volks-* or *Weltgeist*, as the romanticists and Hegel saw it. Even at this stage Goethe does not become collectivist. Morphology of nature is complemented by morphology of history, which has had a stimulating effect on modern historical writing.

It is a method which by intuitive *Gestaltpsychologie* penetrates into the core, the creative center, whence emanate events in organic sequence, leading to a divination of future events. It is unscientific, of course, and again scarcely acceptable to modern historians concerned with external causes, but it is inspiring and full of deep insight into human behavior, if used by the right men. Wilhelm von Humboldt, Carlyle, Emerson, Niebuhr, Ranke, Jakob Burckhardt, Dilthey, Chamberlain, Spengler, Gundolf applied it with great skill. Although factually unreliable, we would not miss it, because it broadened our vision, and encouraged, even by its errors, new investigations.

It cannot be concealed that there are dangers in this method, and Goethe himself became a victim of them. Just as he underestimated the French Revolution, so he underestimated the patriotic fervor of the *Freiheitskriege* and the endeavors of the *Burschenschaften* to unify the Reich by mobilizing the intellectual forces of the academic world. By the same token he overestimated Napoleon. After the victorious *Freiheitskriege* he apologized for his "error" in *Des Epimenides Erwachen* but would not acknowledge the new "Reaction" directed by Metternich to safeguard the tumbling "good old order." The historian Goethe still awaits final evaluation. The new book by Reinhard Buchwald, *Goethe und das deutsche Schicksal* (Munich, 1948) should be very helpful in such an effort.

As to the second point, Goethe's new interest in world literature, I may, for brevity's sake, refer to the excellent work by Fritz Strich, *Goethe und die Weltliteratur* (Berne, 1946). It shows that

Goethe was not only the creator of the term *Weltliteratur* but its most prominent propagator. It is no exaggeration to say that comparative literature, an outgrowth of romantic universality, was elevated to the rank of a science through his authoritative example. Still in its infancy today, it is a challenge for scholars as well as for responsible national leaders. It is one of the most promising means of promoting the much needed global understanding.

Finally, a word on Goethe's third endeavor, his striving for a world religion in which the dogmatic differences between the great monotheistic religions were to be harmonized by the undogmatic reverence to the "Great Being" that governs them all. It is only through religion that the peoples of the West and those of the East can be united in a world brotherhood, devoted to the creation of culture for the benefit of all. This great idea lies behind the *West-Östliche Divan* written at a time when the European powers quarrelled about the spoils of their victory over the common enemy, but did not see the dangers that the East, especially Russia, held in store for them. The *Divan*, in spite of its apparently carefree form, is a book of serious content, a warning, if there ever was one, against the "Mongolian winter" that may come over Europe and Asia again just as it came over Persia under Timur Lenk in the fourteenth century. The work is of tremendous appeal to the modern reader, provided he can see its implications and its redeeming grace. The concern about religion as the only remedy for threatened mankind also lies behind *Dichtung und Wahrheit* which on the surface seems to be no more than a charming account of the poet's youth, but in reality is a presentation of religion's development, illustrated by the religious growth of the poet himself. In other words, it is a symbolic morphology of religion and as such just as little known as the *Divan* or the *Wanderjahre*. It is the greatest biography, because it was written *sub quodam specie aeternitatis*.

As to the fifth and last movement belonging to Goethe's world, that is, the last decade of his life, it is not so easy to find a general philosophical denominator. This is the time of tremendous change, the beginning of the liquidation of the century-old humanistic era and the rise of the modern materialistic age,

caused by the invention of the steam engine and its revolutionary effects on economic, social, and political institutions. All these events came with such astonishing rapidity that philosophy in Germany, still lost in metaphysical clouds, found it hard to adjust itself to the new reality. France and England were more awake in this respect. Saint-Simon with his Christian socialism, Auguste Comte with his positivistic philosophy, and Jeremy Bentham in England with his utilitarian theory of the greatest happiness for the largest number, offered different realistic approaches to the new collectivistic problems, while Schopenhauer, no doubt under the influence of Goethe's *Faust*, made impetuous "will" responsible for the conquest of the world through technical skill. One thing was evident to everyone who followed the trends of the time; the humanistic era with its cult of the individual and its humanistic values was on the decline, if not doomed. A new realistic era began, in which society or state, allied with machine-governed industry, threatened to become supreme. Goethe was one of the first to realize the task implied in such change. Although he himself could no longer make this change, he considered it his duty to prepare his people for the new world. He did this not by preaching and teaching (although he frequently used such means in his many *Sprüche*, aphorisms, letters, discussions, speeches), but chiefly by using the symbolic power of poetry, *die bildhafte Gestaltung*, his greatest talent in which he remained unexcelled. Thus, with a supreme effort, he finished the two *Hauptgeschäfte* of his life, *Faust* and *Meister*, these "incommensurable works," in which he condensed the epoch-making experiences of his life and the final conclusions he had drawn from them.

Faust and *Meister* should always be read together. They complement each other like extension and contraction, action and meditation, power and service. They are the most impressive exemplifications of his polaric philosophy and as such the two essential approaches to the problem of reality, namely, that by the will and that by the idea, or, in other words, that of the egotist and that of the altruist, the asocial and the social attitudes. Neither is right when practised alone but both together contain the solution. Faust's way is that of the rugged individualist who

never cares for any social unit, be it family, church, state, mankind, following only his blind urge to enjoy, possess, conquer, rule and dictate. Love, art, science, commerce and empire building are only different means to satisfy his insatiable ego. Only shortly before his death does he realize that his solipsistic way, his running from desire to enjoyment, was a great error, that instead of serving himself he should have worked with others toward a "free people on a free ground." Too late he recognizes that, instead of associating with the devil, he should have obeyed God's command of love for all, of hope, patience, justice and tolerance, all qualities which he negates in his pact with the demon of evil. It is worth noting that the Promised Land, which, like Moses, he sees in his last grandiose vision, is forever out of his reach. Thus his death is a warning not to follow the Faustian way, while his transfiguration is indicative of the spirit in which he and we should work. It is the spirit of self-conquest by the recognition of the moral and divine laws. In the last analysis it is *caritas*, love, tolerance, sacrifice for all.

In contrast to Faust, Meister is from the very outset a socially and family minded man. The key to his character is to be found in the *Wanderjahre* where in the presence of the astrologer and Makarie he says of himself that the mission of his life is "the establishment of a family." Seen in this light, all his unconscious and conscious actions are steps in this direction. From the *Gewissensehe* with Marianne they lead through real marriage with Natalie to different forms of work-families, from there in constantly growing concentric circles to the idea of a world family governed by religious laws, to be realized here in America. While Faust is all will to conquer, Meister is all will to sacrifice, even to the extent of neglecting the duties toward himself; too passive and weak, to be sure, to inspire courageous action, but always impelled by the noblest motives. Faust stands for domination, Meister for cooperation. Faust's state is autocratic, Meister's democratic. Faust's people are slaves in a technocracy, Meister's are citizens in a human theocracy. Even if Faust had ever been given a chance to live with his so-called "free people," it is difficult to believe that he would have submitted to a majority will. He would not be Faust if he had. Respect for freedom and

dignity of the individual is not in him. Meister, on the other hand, is only too willing to follow, too eager to give in, to lose his substance out of respect for others. His vision of the new society is broader and more modern than that of Faust. Faust's last vision is national, Meister's international, if not "global." Faust belongs to a declining, perhaps to a past age, Meister points to the rising time of world consciousness.

The conclusion for us is clear: the vital problems of our modern times, individualism and socialism, nationalism and internationalism, mechanism and organism, religion and technical sciences, these problems cannot be solved in a one-sided way. Not by Faustian will-power alone, that is, by accumulation of technical and military power, not by Meister's idea alone, that is, by passive understanding, help and love, but by an intimate co-operation of both, a cooperation, however, in which the ethical idea and not the will for power must have the upper hand. Thus Goethe's remedy for our greatest modern concern is the moralization of our political world, and the control of machine power by the power of the spirit. To avoid a disastrous conflict between East and West, totalitarian and democratic forms of government, we need a moral world order, in which ethics count more than mathematics, responsibility toward others more than concern for our personal welfare. It is a community with equal respect for, but also equal duties by all. It is the earthly form of the *Civitas Dei*, a utopia of the past, but the pressing demand of our time. Such world order we try to establish today through the United Nations, the World Council of Churches, and many other global organizations. All this Goethe has not only foreseen, but demanded as tasks for realization. It is especially gratifying for us that he has entrusted this noble task to the American nation for which he always had the deepest respect and whose future world importance he anticipated at a time when the rest of Europe saw in America no more than a land of adventurers and exploiters. Thus Goethe, the prophet, and world councilor, only comes to life in our time. His dreams are our present realities, his prophecies our obligations. It is our duty to fulfill his message through courageous, responsible leadership. If we do, we need not worry that Goethe's world is dead.

JOHANN WOLFGANG GOETHE AND CHEMISTRY

Herbert S. Klickstein

JOHANN WOLFGANG VON GOETHE is to all synonymous with literary greatness, but to only a few does he suggest science. Absorbed in Goethe's poetry and philosophy most scholars unfortunately overlook this side of Goethe's many-faceted life. To his contemporaries he was as great a scientist as poet. In physics his *Farbenlehre*,¹ which was in direct opposition to Newtonian concepts, precipitated a bitter controversy. As a botanist he wrote *Versuch die Metamorphose der Pflanzen zu erklären*² which some hold introduced the general science of morphology. Goethe also contributed to anatomy, mineralogy, geology, and chemistry.³ His scientific writings have a distinctive stamp of originality and imagination. The literature of Goethe cannot be fully appreciated without an understanding of his scientific work, particularly chemistry. In *Dichtung und Wahrheit*, *Faust*, *Wilhelm Meister*, and the like, various phases of alchemy and chemistry are mentioned. A closer perusal of these works suggests more than a casual acquaintance with chemistry. The historian of chemistry has, therefore, a great deal from which to draw.^{4,5} As with most of his life, his chemistry can be understood only in its relationship to the whole.⁶

In 1765, when Goethe began his studies in Leipzig, chemistry was in gestation, clinging to the placental cord of alchemy with its mysticism and superstition. It was still in the meshes of the phlogiston theory.⁷ The philosopher's stone and the elixir of life were sought by some. Germany, in economic strife, was rampant with turmoil and depression. Many turned to religion and philosophy for spiritual refuge. From these beginnings there sprang secret societies and mystic orders. The *Orden der Rosen-*

kreuzer was one with alchemy in its ideal. This was Goethe's chemical heritage.^{8,9}

In Leipzig between 1765 and 1768 Goethe had daily contact with medical students, who would gather at the home of Hofrath Ludwig, a botanist and physician. The conversations concerning the science of the day stimulated his interest, for he found the study of law dry. He was soon attending the medical lectures and it was not long before he was reading scientific tracts, particularly those on alchemy. It was in 1768, when convalescing from an illness, that his interest first took an active form. This was due to the influence of his doctor, his mother and a friend, Katherine von Klettenberg; all were members of a secret natural philosophical society. Goethe speaks of the physician in *Dichtung und Wahrheit*¹⁰:

The physician was an inexplicable, sly-looking, friendly speaking, and, moreover, abstruse man, who had gained himself quite a peculiar confidence in the pious circle. . . . He extended his practice by the gift of showing in the background some mysterious medicines prepared by himself. . . . To excite and strengthen our faith in the possibility of such a universal remedy, the physician . . . had recommended certain chemico-alchemical books to his patients and given them to understand that by one's study of them, one could well attain this treasure for oneself.

Von Klettenberg's influence was considerable.

She had already secretly studied Welling's *Opus mago-cabalisticum*.¹¹ It needed small incitement to inoculate me also with this disease. I procured the work. . . . We turned to the works of Theophrastus Paracelsus, and Basilius Valentinus, as well as to those of Helmont, Starkey, and others whose doctrines and directions, resting more or less on nature and imagination, we endeavoured to see into and follow out. . . .

Goethe studied the alchemical and chemical works and soon outfitted a laboratory. This was an important step, for it taught him the fundamentals of experimental chemistry:

Scarcely was I in some measure recovered . . . when I also began to provide myself with a little apparatus. A small air-furnace with a sand bath was prepared, and I very soon learned to change the glass alembics, with a piece of burning match-cord, into vessels in which the different mixtures were to be evaporated.

Here he prepared his first chemical compound—sodium silicate:

But what busied me most, for a long time, was the so-called *Liquor Silicum* (flint juice), which is made by melting down pure quartz-flint with proper proportion of alkali, whence results a transparent glass, which melts away on exposure to the air, and exhibits a beautiful clear fluidity. . . . I had acquired a peculiar dexterity in preparing this *Liquor Silicum*, the fine white flints which are found in the Main furnished a perfect material for it.

It is evident from the following that these early experiments in chemistry were appreciated by Goethe:

Strange and unconnected as these operations were, I yet learned many things from them. I paid strict attention to all the crystallations that might occur, and became acquainted with the external forms of many natural things, and, inasmuch as I well knew that in modern times chemical subjects were treated more methodically, I wished to get a general conception of them. . . . The chemical *Compendium* of Boerhaave attracted me powerfully, and led me on to read several of his writings. . . . I found an inducement to study also the *Aphorisms* of this man, which I was glad to stamp upon my mind and in my memory.

Upon recovering, Goethe was sent to the University at Strassburg in 1770 for the completion of his studies. As in Leipzig he evaded the law lectures, preferring to frequent those of the sciences.

Most of my fellow-boarders were medical students who zealously converse about their science and profession even out of hours of study. . . . Medicine employs the whole man. . . . At table then I heard nothing but medical conversations, just as formerly in the boarding-house of Hofrath Ludwig . . . and I was more easily borne along by the stream as I had just so much knowledge of all these things that my desire for science could soon be increased and inflamed.¹²

It was at Strassburg that Goethe took his first formal training in chemistry, a course given by Spielmann. In a letter to von Klettenberg at this time, he declared that chemistry had become his secret love. A visit to the heavily industrialized Saar district in 1770 disclosed to him the wide application of chemistry to manufacturing processes. A deep impression was made on Goethe, one that was to modify his future emphasis in chemistry to its technology. The revelation of practical chemistry strengthened

by his own early experiments freed him of all alchemical concepts. Goethe recalls his first introduction to technological chemistry in his autobiographical notes¹³:

Here I was now properly initiated into the interest for mountain countries, and the love for those economical and technical investigations which have busied me a great part of my life was first awakened within me . . . rich coal-pits at Dutweil, of the iron and alum works, and even of a burning mountain. . . . In the alum works we made accurate inquiries after the production and purifying of this so necessary a material. . . . A strong smell of sulphur surrounded us; one side of the cavity was almost red hot, covered with reddish stone burnt white; thick fumes arose from the crevices.

The vivid description Goethe has written of the Saar bears testimony to its impact:

Shining clouds of glow worms hovered around us, betwixt rock and thicket, so now the spark-spitting forges played their sprightly fireworks towards us. We passed, in the depth of night, the smelting houses situated in the bottom of the valley, and were delighted with the strange half-gloom of these dens of plank, which are but dimly lighted by a little opening in the glowing furnace. The noise of the water, and of the bellows driven by it, the fearful whizzing and shrieking of the blast of air which, raging into smelted ore, stuns the ear and confuses the senses.

After receiving his law degree Goethe was summoned to the Court at Weimar, for he had already acquired a literary name. His state duties were multiple—the building of roads, mining, forestry, agriculture—in short, complete industrial control of the region. In addition there were the many cultural demands of his station. This provided Goethe with a fertile field for the development of his scientific pursuits. The desire of the Grand Duke, Karl August, to develop the natural resources of the domain was impetus to broaden his chemical background. Mining acquainted him with mineralogy,¹⁴ and he soon was collecting not only the minerals of his own region but those of others as well. Mineralogical surveys were but a step to geology, but in actuality mineralogy, geology and chemistry were but one to Goethe and served a dual attraction—they not only satisfied his scientific curiosity but his utilitarian concept as well. Goethe utilized his early chemical studies in assaying, and kept an

account of his results. His cognizance of the importance of chemistry in mineralogy is to be found in many of his letters.

When Goethe traveled to Italy he made careful scientific observations of the countries he passed through. From the Tirol he wrote:

The limestone of the Alps, which I have as yet travelled over has a greyish tint, and beautiful, singular, irregular forms, although the rock is divisible into blocks and strata. . . . On a micaceous slate of dark green and grey colours, and thickly veined with quartz, lay a white, solid limestone, which, in its detritus, sparkled and stood in great masses. . . .

—On the Brenner, September 8, 1786

Letters from Italy carry many such details:

I rode towards Palmero, where is found the so-called Bolognese sulphate of Barytes, out of which are made the little cakes which, being calcined, shine in the dark if previously they have been exposed to the light. . . . I also found perfect crystals of gypsum. Mineralogists will be able to point out further peculiarities in the specimens I bring with me. And I was now again loaded with stones! I have packed up at least half a quarter of a hundred-weight.

—Bologna, October 19, 1786

When in Naples Goethe found Vesuvius a rich source of inquiry:

This mass of solid greyish stalactite appears to have been formed by the sublimation of the very finest volcanic evaporation, without the co-operation of either moisture or fusion. It will furnish occasion for further thinking. . . .

—Naples, March 2, 1787

Goethe returned to Weimar with a new scientific drive. His position brought to him many outstanding chemists and associations followed. One such was with Götting (1799) with whom he investigated the extraction of sugar from sugar beets. It was, however, with Johann W. Döbereiner,¹⁵ that Goethe was to complete his chemical researches. This was a fortunate association, for Döbereiner was of the same practical mind as Goethe, and yet a thorough chemist. They met when Goethe was requested to furnish a laboratory for Döbereiner at Jena. Their friendship was destined to be as close personally as academically.¹⁶ Many aspects of chemistry were covered by Goethe and Döbereiner in

their subsequent work. Their preparation of illuminating gas and the formulation of new alloys were of a technical nature and the result of the need brought about by the blockade of German ports. Goethe also returned with Döbereiner to more theoretical experiments, *e.g.*, strontium compounds which later were used in the “triads.” They synthesized oxalic acid from carbon dioxide and carbon monoxide, an early organic synthesis. The use of catalysts, the preparation of sugar from alcohol, etc., were other problems. That their collaboration was so successful is surprising, for Goethe was not the easiest of men with whom to work, as the following passage illustrates¹⁷:

The Emperor of Russia had forwarded to Döbereiner a bar of platinum. It was given to Goethe, who was to examine it, and make any experiments on it he pleased and then transmit it to Döbereiner. Goethe, who had a collector’s mania, placed the bar among his treasures, and delighted himself with contemplating it, till at last he could not be brought to part with it. Döbereiner, impatient, wrote to him begging to have it sent, but no answer. He wrote again without success . . . Goethe delayed and delayed and could not bring himself to part with the platinum and when Döbereiner out of patience complained to the Grand Duke, Karl August laughed and said “Leave the old monkey in peace, you’ll never get it from him. I will write to the Emperor for another. . . .”

Goethe had the respect of his chemical contemporaries, which was not always the case among his other scientific associates. The great Swedish chemist Jacob Berzelius was an admirer of Goethe. His description of Goethe, made during a trip through Germany, is noteworthy.¹⁸

Goethe ist ein 72jähriger Mann von mittlerer Körpergrösse, untersetzt und kräftig, sein Haar, welches auf ihm wie auf einem anständigen Beamten liegt, ist noch nicht grau, und seine ganze Haltung war die eines gut gekleideten, ehrwürdigen, altmodischen Inspektors. Er ist eher schweigsam als gesprächig, äussert sich mit Gutmütigkeit und nicht tranchant und ist im Wesen viel mehr wahrer Philosoph als in der Schrift. Er ist auf seine alten Tage ein so eifriger Geologe geworden, dass er in den 3 bis 4 Tagen, ein paar hundert Tuffsteine gesammelt hatte.

—To Carl Palmstedt, Karlsbad

July 8, 1822

In the foregoing the development of Goethe’s first alchemical interests to his later chemical accomplishments has been traced. His experiments with Döbereiner, although of consequence, were

overshadowed by his practical motives. This is exemplified in his mature criticism of the chemist Stauf, whom he encountered on his first trip to the Saar:

He (Stauf) belonged to the chemists of that time, who, with a hearty feeling for all that could be done with the products of nature, took delight in the abstruse investigations of trifles and secondary matters, and with their insufficient knowledge were not dexterous enough to do that from which properly economical and mercantile profit is to be derived.

Perhaps this practical approach was Goethe's real contribution to chemistry, for the theory of the nineteenth century left him somewhat confused. In a letter to Seebeck he wrote (1812):

The new chemistry. It strikes me as very remarkable that science, which in its origin was enveloped in mystery must once more, in its infinite development, turn into a mystery.

It was undoubtedly the influence of Döbereiner and the others at Jena that kept Goethe's imagination from carrying him too far astray. This explains why, of all his scientific endeavors, chemistry has been the least criticized.

Goethe's imaginative chemistry is to be found in his literary works; here it is acclaimed not only by the chemist but by all. The significance of *Faust* and its origins is beyond the scope of this paper, but who can deny its alchemical conception?¹⁹ *Wilhelm Meister* is still another. The novel *Die Wahlverwandtschaften* is an interesting example of how Goethe employed the concept of chemical affinities.²⁰ Goethe's use of chemistry in his writings is as important as his actual work in the laboratory, for through it he disseminated chemical principles to a wide audience. It would have angered Goethe if he had known that his chemistry would always be synonymous with his literature, but such unquestionably is the case.

NOTES

1. *Zur Farbenlehre*, 2 volumes with atlas, *Sechszehn Tafeln nebst der Erklärung zu Goethe's Farbenlehre*, Tübingen, 1810. It was considered by Goethe to be his best scientific work. It has been translated by Charles Lock Eastlake, *The Theory of Colours*, 1840.

2. *Versuch die Metamorphose der Planzen zu erklären*, Gotha, 1790. A new translation has been prepared by Agnes Arber: *Goethe's Botany, The Metamorphosis of Plants (1790) and Tober's Ode to Nature (1782)*, Waltham, 1946.
3. Faivre, E., *Oeuvres scientifiques de Goethe, analysées et appréciées*, Paris, 1862.
4. There is much disagreement as to the value of the scientific accomplishments of Goethe. Agnes Arber (*op. cit.*) has made this clear in a discussion of Goethe's place in the history of botany. The "difficulty with which the student of Goethe's botany is faced at the onset is that those scholars who have the fullest and most critical knowledge of his writings differ radically in their estimate of his science, both in relation to his work in general and when considered in itself." W. Troll, in editing Goethe's *Morphologische Schriften* (Jena, 1926), maintains that ". . . the centre and focal point of his whole mental life is to be sought in his scientific writings" (Arber, *op. cit.*). C. Sherrington in *Goethe on Nature & on Science* (Cambridge, 1949) is as decisive: "Were it not for Goethe's poetry, surely it is true to say we should no longer trouble about his science." The opinion of E. Nordenskiöld is the same (*The History of Biology*, New York, 1935): ". . . His biological writings have certainly been more admired at a distance than read in the original, a fact that no doubt contributed in the long run towards concealing their true quality"; he concludes that "Goethe takes his place in the history of biology as a stimulating force; his influence was, it is true, both good and bad, but by no means inconsiderable." This can be reconciled with the conclusion of Arber: "Goethe was a great biologist who in the long run overstepped the bounds of science."

In optics Goethe has not fared as well, particularly at the hands of the modern historian. That "Goethe deserves no place in the history of optics" (Nordenskiöld, *op. cit.*) is perhaps not completely valid, for although his basic anti-Newtonian concepts were erroneous, his work on physiological colors has proven suggestive.

Goethe himself considered his work in the natural sciences as important as his literary accomplishments.

5. Magnus, R., *Goethe als Naturforscher*, Leipzig, 1906.—Nicholas, J. S., *Trans. Conn. Acad. Arts and Sci.*, XXXII (1933), 1–19.—Schmid, G., *Goethe und die Naturwissenschaften. Eine Bibliographie*, Halle, 1940.
6. The following publications concerning Goethe's chemistry were used, in part, in the preparation of this paper. Brauer, K., "Goethe und die Chemie," *Z. angew. Chem.*, XXXVII (1924), 185–9.—Walden, P., "Goethe und die Chemie," *Z. angew. Chem.*, XLIII

- (1930), 792–7, 847–50, 864–8.—Walden, P., *Goethe und die Naturwissenschaften*, Bremen, 1933.—Walden, P., *Goethe als Chemiker und Techniker*, Berlin, 1932.—Lockermann, G., “Goethe’s Beziehungen zur Chemie,” *Chem-Ztg.*, XLIV (1932), 213–14.—Gehrt, A. J., “Goethe the Chemist,” *J. Chem. Ed.*, XI (1934), 543–5.
7. The idea of an inflammable earth to explain combustibility was introduced by J. J. Becher in 1669 and was extended into the phlogiston theory by G. E. Stahl. He assumed that all combustible bodies had a common principle “phlogiston,” which escaped on burning.
 8. In spite of this, the eighteenth century was perhaps the most important in the history of chemistry. For the first time there was a clear recognition of several of the gases. Oxygen was discovered and played an impressive role in Lavoisier’s theory of combustion, that soon replaced the phlogiston theory. A new concept of the element was introduced and its clear distinction from a compound was understood. With this a logical nomenclature was formulated. Quantitative chemistry was extended with the laws of fixed, equivalent and multiple proportions. The beginnings of the nineteenth century saw the early development of the atomic theory.
 9. Partington, J. R., “Chemistry through the Eighteenth Century,” *Philosophical Magazine*, Commemoration Number (1948), 47–66.—Partington, J. R., *A Short History of Chemistry*, London, 1948.—Döbling, H., *Die Chemie in Jena zur Goethezeit*, Jena, 1922.
 10. *The Autobiography of Goethe*, translated by John Oxenford, London, 1891 (pp. 291–5, *et al.*), from which the subsequent passages are quoted.
 11. Welling, G., “*Opus mago-cabalisticum et theosophicum . . . über Magie, Kabala und Theosophie*,” Frankfurt, 1760 (first edition, 1719).
 12. *Op. cit.*, pp. 309–10.
 13. *Op. cit.*, pp. 363–5.
 14. A hydrated ferric oxide has been named *Goethite* in his honor.
 15. Johann Wolfgang Döbereiner (1780–1849) studied chemistry at Strassburg. He was appointed, in 1810, to the chair of chemistry and pharmacy at Jena. Döbereiner made the first use of platinum as a catalyst. He is further remembered for his periodic system of the elements (“triads”) and his contributions to technical problems.
 16. Schiff, J., *Briefwechsel zwischen Goethe und Johann Wolfgang Döbereiner (1810–1830)*, Weimer, 1914.

17. Lewes, G. H., *The Life and Works of Goethe*, London, 1885, p. 409.
18. *Jacob Berzelius—1779–1848—Reiseerinnerungen aus Deutschland*, Berlin, 1948, p. 19.
19. Lippmann, E. O., “Der Stein der Weisen und Homunculus, zwei alchemische Probleme in Goethe’s Faust,” *Chem-Ztg.*, XLIV (1920), 44.—Loesche, M., *Grundbegriffe in Goethe’s Naturwissenschaft und ihr Niederschlag in Faust*, Leipzig, 1944.—Bartscherer, A., *Paracelsus, Paracelsisten und Goethe’s Faust—Eine Quellenstudie*, Dortmund, 1911.
20. Crum, R. B., *Scientific Thought in Poetry*, New York, 1931, pp. 131–56.

An Exhibition Commemorating

THE 200th BIRTHDAY OF
JOHANN WOLFGANG GOETHE

August 28, 1749

THE UNIVERSITY OF PENNSYLVANIA LIBRARY

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1. Trithemius, Joannes. *Epistolarum familiarium libri duo* . . . Hagenau, Petrus Brubach, 1536.

Engel 1. Contains the first mention in print of Faust.
Lent by Emil Hirsch.

2. *De Historie van Doctor Johannes Faustus. Die een uitnemenden grooten Tovenaar in zwarte Konsten was* . . . *Uit den Hoogduitschen Exemplaar overgezien* . . . N.p., n.d. [16—].

Not in Engel, Kippenberg, etc. Dutch edition of the *Faustbuch*; like all early editions of great rarity.
Lent by Otto Wolff, Jr.

3. Herder, J. G., *editor*. *Von deutscher Art und Kunst*. Hamburg, Bode, 1733.

Hirzel A32. First edition of Goethe's "Es sah ein Knab' ein Röslein stehn," and "Von deutscher Baukunst."
Lent by Axel G. Rosin.

4. Clavigo. Leipzig, Weygandsche Buchhandlung, 1774.
Hirzel A48–53. One of five issues of the first edition.
Lent by Haverford College Library.
5. Neucröfnertes moralisch-politisches Puppenspiel. Leipzig und Frankfurt, 1774.
Hirzel A54. First edition; twice reprinted during the same year.
Lent by Emil Hirsch.
6. Die Leiden des jungen Werthers. Leipzig, Weygandsche Buchhandlung, 1774. 2 pts.
Hirzel A58–59. Two different issues of the first edition, of which one is lent by Axel G. Rosin.
7. Les passions du jeune Werther. Manheim, et se trouve à Paris, 1777.
Fourth [?] French edition of Werther.
Gift of John F. Lewis, Jr.
8. The Sorrows and Sympathetic Attachments of Werther. Philadelphia, R. Bell, 1784.
Evans 18501. First American edition.
Lent by Historical Society of Pennsylvania.
9. [Nicolai, Friedrich]. Freuden des jungen Werthers. Leiden und Freuden Werthers des Mannes. Berlin, F. Nicolai, 1775.
Hirzel A66, 1.
10. Iphigenie auf Tauris. Leipzig, G. J. Göschen, 1787.
Hirzel A138. Second edition; the first edition published the same year has the legend “Ächte Ausgabe” on the title-page.
Lent by Bryn Mawr College Library.
11. Schriften. Leipzig, G. J. Göschen, 1787–91.
Hirzel A146. *
Lent by Otto Wolff, Jr.
12. Egmont. Leipzig, G. J. Göschen, 1788.
Hirzel A129. Volume 5 of Goethe’s Schriften (1787–89). Several issues of the first edition were published in the single year, 1788.

13. Das römische Carneval. Berlin, J. F. Unger; Weimar und Gotha, In Commission bey C. W. Ettinger, 1789.
Hirzel A156. First edition, with errata leaf. This copy is from the library of the conductor Reichardt, with the inscription "Geschenk von Göthe."
Lent by Axel G. Rosin.
14. Faust. Leipzig, G. J. Göschen, 1790.
Kippenberg 2379.
Lent by Haverford College Library.
15. Faust. Stuttgart und Tübingen, J. G. Cotta, 1816.
Hirzel A330.
Lent by Axel G. Rosin.
16. Faust. New-York, Verlagshandlung 471 Pearl St., 1837.
First German edition of parts 1 and 2 printed in the United States.
17. [Klinger, Friedrich Maximilian]. Faust's Leben, Thaten und Höllenfahrt. Zweite . . . Ausgabe. St. Petersburg, 1794.
Kippenberg 2350 (First edition: 1791).
Lent by Otto Wolff, Jr.
18. Versuch die Metamorphose der Pflanzen zu erklären. Gotha, C. W. Ettinger, 1790.
Hirzel A160. First edition.
19. [Jenisch, Daniel]. Litterarische Spiessruthen oder die hochadligen und berühmigten Xenien. Weimar, Jena und Leipzig [1797].
Kippenberg 1485. Goethe's and Schiller's Xenien, with critical notes and "Anhang" containing Wieland's purported criticism.
20. Herrmann und Dorothea. Berlin, F. Vieweg, 1798.
Hirzel A228. One of several editions published in the same year, at least two as "Taschenbuch für 1798."
Lent by Axel G. Rosin.
21. Herrmann und Dorothea. Neue Ausgabe. Braunschweig, F. Vieweg, 1799.
Hirzel A231a.
Lent by Axel G. Rosin.

22. Herrmann und Dorothea . . . mit vier Kupfern nach Kolbe von Esslinger. Braunschweig, F. Vieweg, 1822.
Hirzel A377.
Lent by Emil Hirsch.
23. Herrmann und Dorothea . . . Neue Ausgabe. Braunschweig, F. Vieweg [before July 10, 1826].
Not in Hirzel.
24. Propyläen. Eine periodische Schrift. Herausgegeben von Goethe . . . Tübingen, J. G. Cotta, 1798–1800.
Hirzel A223.
25. Mahomet. Trauerspiel . . . nach Voltaire von Göthe. Tübingen, J. G. Cotta, 1802.—Tancred. Trauerspiel . . . nach Voltaire von Göthe. Tübingen, J. G. Cotta, 1802.—Was wir bringen. Tübingen, J. G. Cotta, 1802.
Hirzel A244, A245 and A246. Three first editions bound in one volume.
Lent by Axel G. Rosin.
26. Leben des Benvenuto Cellini . . . übersetzt und mit einem Anhang herausgegeben von Goethe. Tübingen, J. G. Cotta, 1803.
Hirzel A248. First edition.
Lent by Axel G. Rosin.
27. Die natürliche Tochter. Berlin, 1804.
Goed. IV, 3, 583–46. First separate edition.
28. Winckelmann und sein Jahrhundert. In Briefen und Aufsätzen herausgegeben von Goethe. Tübingen, J. G. Cotta, 1805.
Hirzel A256. First edition.
Lent by Axel G. Rosin.
29. Prometheus. Eine Zeitschrift. Herausgegeben von Leo von Seckendorf und Jos. Lud. Stoll. Wien, Geistinger's Buchhandlung, 1808.
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Lent by Axel G. Rosin.

30. Die Wahlverwandschaften. Tübingen, J. G. Cotta, 1809.
Hirzel A273. First edition.
Lent by Axel G. Rosin.
31. Zur Farbenlehre. Tübingen, J. G. Cotta, 1810.
Kippenberg 386. Two volumes of text and one volume of plates and explanations (first editions) from the library of Cotta.
Lent by Axel G. Rosin.
32. Aus meinem Leben. Dichtung und Wahrheit. Tübingen, J. G. Cotta, 1811–22.
Hirzel A292. First edition.
Lent by Axel G. Rosin.
33. Gedichte. Stuttgart und Tübingen, J. G. Cotta, 1815.
Hirzel A321.
34. Werke. Stuttgart und Tübingen, J. G. Cotta, 1815–19.
Hirzel A322.
Lent by Library Company of Philadelphia.
35. Ueber Kunst und Alterthum. Stuttgart, Cottaische Buchhandlung, 1816–32.
Hirzel A327. First edition, with all issues in original paper covers.
Lent by Axel G. Rosin.
36. Wilhelm Meisters Wanderjahre oder die Entsagenden. Stuttgart und Tübingen, Cotta'sche Buchhandlung, 1821.
Hirzel A369. Two different copies.
Lent by Axel G. Rosin and Haverford College Library.
37. Wilhelm Meisters theatralische Sendung. Stuttgart, J. G. Cotta, 1911.
First edition of the original version of Wilhelm Meisters Lehrjahre.
Lent by Emil Hirsch.
38. Anzeige von Goethe's sämtlichen Werken, vollständige Ausgabe letzter Hand. [Stuttgart und Tübingen, J. G. Cotta, 1826.]
Kippenberg 343. Publisher's announcement.
Lent by Emil Hirsch.

39. Werke. Vollständige Ausgabe letzter Hand. Stuttgart und Tübingen, J. G. Cotta, 1827 [—42].
Hirzel A412. Published in 60 volumes.
40. Briefwechsel zwischen Schiller und Goethe in den Jahren 1794 bis 1805. Stuttgart und Tübingen, J. G. Cotta, 1828–29.
Hirzel A419. First edition.
Lent by Axel G. Rosin.
41. Sammlung vorzüglicher Poesien, Gesänge und Lieder von deutschen Dichtern. Gesammelt und herausgegeben von Wilhelm Megede. Reading, D. Roths, 1831.
One of the earliest collections of German poetry with Goethe's lyrics published in this country.
Lent by George Allen.
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42. [Venezianische Epigramme] Epigramme—Venedig 1790. Munich, H. von Weber, 1923.
Private press edition, presenting the epigrams in a new critical arrangement.
Lent by Emil Hirsch.
43. Das Tagebuch . . . 1810. Munich, Phantasmus Verlag, 1919.
One of the innumerable private press editions of Goethe's diary of 1810.
Lent by Emil Hirsch.
44. Drei Märchen: Die neue Melusine; Die smaragdene Schlange; Der neue Paris. Munich, H. von Weber, 1922.
Private press edition.
Lent by Emil Hirsch.
45. Schünemann, Georg, *editor*. Lieder von Goethe, komponiert von Franz Schubert. Berlin, A. Frisch, 1943.
Includes a facsimile reproduction of the original Schubert manuscript in Prussian State Library, Berlin.
Lent by Otto E. Albrecht.

46. Wahl, Hans, *editor*. Goethes Reise-, Zerstreuungs- und Trostbüchlein. 36 Handzeichnungen. Leipzig, Insel-Verlag [1935].
Drawings of the years 1806–1807, dedicated to the Princess Caroline of Weimar.
Gift of Adolf Klarmann.

GOETHE AUTOGRAPHS

47. The last page of a letter to K. F. E. Frommann, Jena, dated July 13, 1816. Signature by Goethe.
Published in the Weimar edition, 4th ser., v. 27, p. 85, of Goethe's Werke and in the Goethe Jahrbuch, v. 8, p. 145.
Lent by Otto Wolff, Jr.
48. Six line poem "Eile Freunden dies zu reichen . . ." dated March 1, 1826, in Goethe's handwriting and signed G.
Lent by Otto Wolff, Jr.
49. Reference to three poems in volumes of Goethe's "Ausgabe letzter Hand." Undated and unsigned.
Lent by Otto Wolff, Jr.
50. Account sheet for the "Grossherzogl. Museum" and "Grossherzogl. Bibliothek" Weimar, dated January 15, 1830. Signed by Goethe.
Lent by Otto Wolff, Jr.

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BISHOP TUNSTALL AND THE ENGLISH *HORTULUS*

Charles C. Butterworth

THERE is something dramatic about the coming to light of a rare book supposed to have been lost for over four hundred years. In February 1949, the British Museum acquired a unique copy of the *Hortulus Animae* in English, published at Antwerp in 1530. It is small in size, with only 21 lines to a full page, made up of 144 leaves (signatures A to S in eights, omitting J of course) and with one leaf wanting (fol. B3). Its title reads:

**Ortulus anime. The garden
of the soule: or the englisshe pri
mers (the which a certaine prin
tlatelý corrupted/& made false to
the grete sclaunder of thauthor
& greter desayte of as many as bo
ughte and red the) newe correc
ted and augmented.**

Ortulus anime. The garden of the soule: or the englisshe primers (the which a certaine printer lately corrupted/& made false to the grete sclaunder of thauthor & greter desayte of as many as boughte and red them) newe corrected and augmented.*

The colophon was fictitious as to place and printer, reading:

Emprinted at Argentine in the yeare of ower lorde .1530. by me Francis Foxe Praise ye the lorde.

* See facsimile; reproduced by permission of the Trustees, The British Museum, London.

The real printer was Martin de Keyser of Antwerp. The author was George Joye and this Hortulus was obviously a revision of an earlier Primer as the title implies. No known copy of the earlier one has survived. At the beginning of 1530 de Keyser published another volume similar to the Hortulus in size and style of type which was also said to be imprinted by “Francis Foxe” at Argentine (the printers’ quarter in Strassburg). This was *The Psalter of David in Englishe* (S.T.C. 2370); it was likewise the work of Joye.¹

Although this *Ortulus anime* in English was in the fine collection of Narcissus Luttrell in 1693, it had apparently been lost sight of since 1548, when John Bale listed the “Hortulum animae” among the translations of Joye in his *Illustrium majoris Britanniae scriptorum summarium* (S.T.C. 1295; fol. 239v). According to Hoskins,² there were several contemporary references to the English Hortulus, but the latest he mentions is Bishop Bonner’s list of forbidden books, drawn up in 1542. The earliest of the references was in Foxe’s *Ecclesiastical History* (edition of 1570, vol. II, p. 1159) where it is cited from a list of heretical books proscribed by the Bishop of London. Foxe misprints the title as “Hotlulus animae in Englishe.” Since the list given by Foxe is definitely no earlier than 1530, it is uncertain whether the Bishop of London was then Cuthbert Tunstall or John Stokesley, for Tunstall was transferred to the See of Durham in February 1530. The Hortulus in English also appears on Stokesley’s own list of December 1531.³

Although the Hortulus of 1530 is anonymous, the internal and external evidence supporting the authorship of George Joye is quite conclusive. For our present purpose only the items referred to by Hoskins need be presented:

(1) Sir Thomas More in his preface to *The confutacyon of Tyndales answere* (S.T.C. 18079) says:

The Psalter was translated by George Iay the preste, yt is wedded now/
and I here say the Primer to, . . .

(2) In a letter from Joye to Hugh Latimer, April 29, 1533 (of which an abstract is given in *Letters and Papers of the Reign of Henry VIII*, vol. VI,¹No. 402), Joye says:

. . . I wrote secretly a letter to one that askyd me a questione as concerning why I translatyd the prayer of Esaie not all alyke in the hortulus and in the prophete . . .

(3) In his *Subuersion of Moris false foundation* (S.T.C. 14829) Joye replies to an accusation by More and states that he had a young boy lodging with him for a while (fol. G3^v)—

. . . whome I taught to saye by herte his Pater Noster/ Aue. And Credo yn Englysshe/ withe the two Prayers folowyng in the Ortulus Anime . . .

Another reference to the Hortulus occurs in a letter by Cuthbert Tunstall (Brit. Mus. Ms., Cleop. E.v.388) which is the subject of the present discussion. The letter is printed in full in Strype's *Ecclesiastical Memorials* (edition of 1822, vol. I, pt. 2, p. 274) and an abstract is given in *Letters and Papers* (vol. VIII, No. 1005). The original is undated as to year, nor does it show the name of the person to whom it was written. This is presumed to have been Thomas Cromwell. The manuscript is in the handwriting of a secretary presumably, but Tunstall himself signed it as Bishop of Durham. Through the kind collaboration of Miss Sylvia L. England, of London, I am able to present the following excerpts in their original form:

Right honorable in my humble maner I recomende me unto *your* good mastership. Aduertinge the same that ther is conuey to my handes a litill booke printed in englysshe callyd Ortulus anime whiche was brought in by some folkes of the newe castell and as I am enformyd ther be verey many late brought into the realme of them chefely into London and into other haven townes. Whiche bookes if they may be suffered to goo abroad be like to do great harme emonge the people, for ther is in them a manyfest declaracyon agaynst the effecte of the acte of parlement late made for the establysshement of the Kinges highnes succession, as ye shall perceyue mor playnly in redinge the place *your* self. which declaracion is made in the Kalender of the said booke abowte thend of the monyth of August upon the day of the decollation of saynt Johan Baptyst, to shewe the cause whye he was behedyd. When ye fynde the day rede the glose that is sett in the myddist emonge dominicall letteres all that syde as fer as yt speketh of that mater, and *your* maistership shall forthwith perceyue what harme yt may do yf the booke may be suffred to goo abroad. . . . that booke that came to my handes I do sende *your* maistership herwyth, . . . And thus almyghty Jhesu pre-

serue your goode maistership to his pleasur and yours and haue you in
his blessyd protection From Stokton the vijth day of Julye.

Your humble beedman
Cuthbert Duresme

This letter raises several problems revolving about what date should be assigned to it. Hoskins assumes that it was written in 1537, evidently following the lead of Strype (vol. I, pt. 1, p. 144) who interprets the reference to the calendar of the Hortulus as meaning that there were "some favourable things said of Queen Anne, lately beheaded." On the other hand, Sturge in his careful study of Tunstall⁴ decides that it was written in 1535, which is the date assigned in the *Letters and Papers*. According to this view, the Hortulus was a Catholic product imported to assist in fomenting the Pilgrimage of Grace which took place the following year. Sturge thinks that the "gloss" in the calendar must have been a "comparison of the Baptist's denunciation of Herod's marriage and his consequent martyrdom with the fate befalling those who had dared to protest against Henry's union with Anne." Both these interpretations were propounded while the existence of the *Ortulus anime* of 1530 was still unrecorded. Now that this rare volume has come to light it does little to answer the question; rather it only stirs up fresh inquiries!

The Joye Hortulus of 1530 announces on its title page that it contains "a newe kalendarie." The first problem, which is not without some significance of its own perhaps, is this: the particular leaf showing the end of August with its running comment about John the Baptist is the *only* leaf wanting in the entire unique volume. So we cannot be absolutely certain what it was that this "newe kalendarie" said. Still less have we any way of knowing at present what might have been the wording in the earlier edition of the Joye Primer which was superseded by the Hortulus with its new calendar, and which must have been published in 1529 or very early in 1530.

But sometime in the latter half of 1534 there appeared a Primer published by John Byddell for William Marshall (*S.T.C.* 15986) which was in large part a reprint of the Joye Hortulus. In particular it reprinted the calendar at the beginning of the Hortulus, including its running comment, duly interspersed with "domini-

cal letters” and saints’ days.⁵ Now this running comment, or gloss, was a distinctive feature of the *Joye Hortulus*, virtually unique among the saints’ calendars of the period. As given in the *Marshall Primer*, it shows only a very little editing compared with the text of the 1530 *Hortulus*.

At the end of August, then, the calendar in this *Primer of Marshall’s* reads as follows:

The cause wherfore Iohan the Baptiste was prysoned & headyd foloweth, he monysshed Herode louyngly and tolde hym charytably, supposyng to haue wonne hym saieng/syr it is not lawful for you to haue your brother’s wyfe. Against a great plage god sendeth furth his worde, he sterreth vp his prechers and suffreth them to be persecuted . . .

Thereafter the gloss in the calendar develops into a lengthy admonition against the peril of neglecting to hear the preachers of God’s Word. The entire passage is in Joye’s typical style, and in the 1530 *Hortulus* the missing leaf interrupts the text after the words “he monished Herod,” and on the next leaf it resumes with the third of October.

Now the curious part of all this would be Tunstall’s objection to it. He said that the comment in the calendar of the *Hortulus* was a “manifest declaracyon” against the effect of the recent act of Parliament establishing the royal succession. Apparently, the only act he could possibly have meant was the one enacted just before Parliament was prorogued on March 30, 1534, which confirmed Henry’s marriage with Anne as valid and set aside the claims of Catherine and Mary. But there is absolutely nothing in the wording of the calendar in the *Marshall Primer*, or (by inference) in the *Hortulus* of 1530, that could be construed as unfriendly to Anne Boleyn’s interests. Indeed, the implication is quite the reverse: it is Catherine’s cause that would have been impugned by the allusion to Herod and Herodias, that it was not lawful for him to have his brother’s wife. Not only was this brought forth as a ground for annulling the marriage with Catherine, but the Act of Succession of 1534 specifically prohibits anyone in the realm from marrying his brother’s wife.

Neither is there anything in the wording of the *Hortulus* of 1530 that could be regarded as hostile to Jane Seymour, Anne’s

successor, as Strype assumed in his hypothesis. Moreover, it is doubtful that Tunstall would have addressed Thomas Cromwell as “Your Mastership” as late as 1537. Cromwell, we are told, had been made “Master of the Jewels” in April 1532 and “Master of the Rolls” in October 1534; after January 1535, he was also Vicar-General to the King, and in July 1536, he was knighted and made “Lord Privy Seal.”

All in all, I am inclined to the opinion that Tunstall’s letter is to be dated July 7, 1534. But it is difficult to believe that he was referring to the Hortulus of 1530. There may, of course, have been a later edition of this. Tunstall writes as though the book he is objecting to was just then being imported into London, Newcastle and other “haven towns” in considerable numbers. Joye was still in Antwerp in July 1534, but a year later he was able to return to England. It should also be recalled that during 1534 the official opposition to the circulation of English books containing portions of the Scriptures began to be broken down. In his *Apology* (*S.T.C.* 14820) Joye remarks that the lessening of the tension on this controversial issue gave the reformers “a lytel space to breath & reste” during the summer of 1534. By November, Tyndale could present Queen Anne with a vellum copy of his revised New Testament, though not in person, yet from the safe distance of Antwerp.

By 1535 English versions of the Primer were being published right in London. It is perhaps of interest to note that by then these Primers had abandoned the style of calendar with religious comment running through it and had reverted to the simple recording of saints’ days and holidays. This was notably true of the second Marshall Primer (*S.T.C.* 15988), published on June 16, 1535, and of the Godfray Primer (*S.T.C.* 15988a), the latter being in most respects a very close reprint of the Joye Hortulus of 1530, closer even than the Marshall Primer of 1534, except for the calendar. It is conceivable that Tunstall’s letter may have had something to do with inducing these publishers to forgo in the calendar the luxury of a “gloss” that could be used for propaganda.

As for the theory that Tunstall was referring to a Catholic edition of the Hortulus in English, this is of course possible, but

unlikely. Sturge acknowledges that he has not been able to locate any English “Hortulus”; and, so far as is known, there was no actual Catholic edition of the Hortulus in English, nor is any referred to elsewhere. The Latin *Hortulus Animae*, it is true, was thoroughly imbued with Catholic dogma (such a Latin edition was printed in 1531, for instance); but the Joye Hortulus was decidedly a Protestant production, and he seems to have pre-empted the title *Ortulus Anime* for his English version of the Primer. Prevailing Catholic sentiment had been against the publication of Scriptural passages in English. The earliest printed Primer in English that could be designated Catholic in its tone was issued in 1538 (*S.T.C.* 16004). Before this, 1535–37, Primers according to the use of Sarum were printed with both the Latin and English text and were furnished with a more or less Protestant preface.

Furthermore, no Catholic Hortulus or Primer that I know of made free to utilize the vacant spaces in the saints’ calendar for any sort of running gloss, as Joye’s did. In fact, the orthodox calendar had almost no vacant lines to be so used. This point may be worth a little elaboration, as it throws some light on what is otherwise an inexplicable feature of the first Marshall Primer, the one issued in 1534.

This Primer, which copied its calendar from the Joye Hortulus, was a larger book than Joye’s. In the Hortulus many entries pertaining to “orthodox” saints were omitted and the space filled with a “gloss,” as has been said. In the 1530 edition this gloss occupied all the space available, but in the larger pages of the Marshall Primer there was found to be extra space in the calendar. Accordingly the printer, John Byddell, used patterns of asterisks to fill up this space for nearly the whole month from September 8th to October 8th. The second Marshall Primer (June 16, 1535) used the orthodox form of calendar, in which the only vacant lines near the end of August occurred on September 3rd, 7th, and 11th. But in the Catholic edition of the Latin Hortulus published in 1531 (*S.T.C.* 15972) even these three spaces were filled with names of other saints, such as “Gregorii pape” on September 3rd.

Until more is learned about these elusive English Primers—which can remain in hiding for four hundred years and then suddenly appear in someone’s private library—we must assume one of two things about the Hortulus reported by Bishop Tunstall. Either Joye brought out still another edition of his *Ortulus anime* in the spring of 1534, along with his other publications in that year,⁶ and, influenced perhaps by Luther’s distrust of Henry, inserted in the calendar of this new edition some slighting remark about the King’s marriage with Anne; or else possibly some venturesome bookseller, reckoning on a ready market for imported Primers in England, may have brought out an unauthorized reprint of the first and earliest edition of the Joye Hortulus, the one no longer extant, with its original “kalendarie” dating from about 1529; at which early period there might have been some “gloss” in the calendar which Tunstall deemed repugnant to the tenor of the later Act of Sucession. We know, as a matter of fact, from complaints of heresy formulated by an assembly of churchmen in May 1530, that there was an early edition of the English Primer containing a calendar with a gloss, different from the gloss in the “newe kalendarie” of the 1530 Hortulus. Yet either of these two assumptions is but a frail hypothesis, for it must have been known in 1534 that both Anne and Cromwell were favorable to the circulation of the English Scriptures, and the reformers’ zeal was more likely to be enlisted on the side of the new Queen than against her. A final answer must await further discoveries among the Primers of that period.

NOTES

1. See C. C. Butterworth, *The Literary Lineage of the King James Bible, 1340–1611*, Philadelphia, 1941, pp. 64–67.
2. Edgar Hoskins, *Horae Beatae Mariae Virginis or Sarum and York Primers*, London, 1901; see especially p. 194.
3. See *Early English Text Society, Original Series*, No. 15, edition of 1903, p. 62. Another list given in Wilkins’ *Concilia* (vol. III, p. 721) is later, being dated by Steele as of 1532 (see *Transactions of the Bibliographical Society*, vol. XI, p. 189).

4. Charles Sturge, *Cuthbert Tunstall, Churchman, Scholar, Statesman, Administrator*, London, 1938, p. 200.
5. For the calendar of the first Marshall Primer, see Edward Burton, *Three Primers Put Forth in the Reign of Henry VIII*, Oxford, 1834 (first edition), pp. xvii–xxxi of the preface. For the approximate date of this Primer see C. C. Butterworth, “How Early Could English Scripture Be Printed in England?” in *The Library Chronicle* (University of Pennsylvania) for October 1947.
6. See C. C. Butterworth, *Literary Lineage, etc.*, pp. 75–82.

A LETTER FROM MRS. BARRY

M. A. Shaaber

IN the Furness Memorial Library there is a letter written by the celebrated actress Mrs. Elizabeth Barry (1658–1713), which reads as follows:

Madam

The pleasure I received in hearing
from your Ladyship is impossible to be expressed
and were my time as much in my power as
my inclination I shou'd be perpetually making
use of the Honor your Ladyship has done
me in permitting me to write to you I obeyed
your Ladyships commands to M^r Batterton and
Mrs Bracegirdle who return their humble service
and thanks for soe great a favour; publick
news is uncertain but I presume to give your
Ladyship an account of a marriage and christ-
ening in your family my Lord Baltomer's son
was a tuesday last married to my Lord
Litchfield Eldest Daughter and my Lady Wharton
is brought to bed of a son who is by my Lady
Orford the Duke of Shrewsbury & my Lord
Chancellour on friday next to be made a
Christian by the name of Phillip as for the
Little affairs of our house I never knew a worse [v^o]
Winter only we have had pretty good success
in the Opera of Rinaldo and Armida
Where the poet made me command the
Sea the earth and Air but had I really that
Authority I cou'd with joy forsake it all to wait
on your Ladyship in your retirment which
your Ladyships great goodness gives me hopes wou'd
not be unwellcome to you I am with all
submission

Madam

I beg Leave
to present my
humble Service
to my Lord and wish
him and your Ladyship
Many happy new years

Your Ladyships

Most Obliged
and humble serv^t

Lon: jan: y^e 5th

This moment Alexander

is bespoke to entertain ye

Bride I mentioned & all their guest to-morrow

Eliza: Barry

The superscription reads:

ffor

The Right Honorable the

Lady Lisburne att her

House att Troscod in

Cardiganshire

Salope post

Mongomery bagg

The letter is written on the second recto and verso of a sheet approximately $7\frac{1}{4}"$ x $11\frac{7}{8}"$, folded to make two leaves. The superscription is written on half of the first recto after the sheet has been folded once more. A wax seal is attached and the date ($\frac{JA}{5}$ in a circle) is stamped above the address. Presumably the letter is an autograph.

The letter can be dated 1699 with assurance. According to the *Complete Peerage*, the son and heir of Lord Baltimore was married to the daughter of the Earl of Lichfield on 2 January 1699; according to the *Dictionary of National Biography*, Philip, the son of Lord Wharton, was born late in December 1698, and christened on the fifth of the month following.

The Lady Lisburne to whom the letter is addressed must be the wife of John Vaughan, Viscount Lisburne, of Trawscoed, co. Cardigan. As she was the daughter of the celebrated, or notorious, Earl of Rochester, she would appear to have kept up her father's patronage of the theater, for it was he who, according to report, introduced Mrs. Barry to the stage.

The persons mentioned in the letter, except for "Batterton" and Mrs. Bracegirdle, who are too well known to require comment, may be identified briefly.

"Lord Baltomer" is Charles Calvert, 3d Baron Baltimore (1637–1715), formerly governor of the colony of Maryland, and the bridegroom is the son who became the fourth baron for a few months after his father's death. He was about twenty-one at the time of the marriage. The bride was the daughter of the first Earl

of Lichfield and his wife, Lady Charlotte Fitzroy, an illegitimate daughter of Charles II. "My Lady Wharton" is Lucy, the second wife of Lord Wharton (subsequently the first Marquis of Wharton). The relationship implied by Mrs. Barry's phrase "in your family" is clear enough so far as the wedding is concerned: Lady Lisburne's grandmother was also the grandmother of the Earl of Lichfield. After surviving her first husband, Sir Francis Henry Lee, Bart., to whom she had borne Lichfield's father, she married the first Earl of Rochester and became the mother of the most eminent holder of that title. But what link between Rochester and Lord Wharton Mrs. Barry had in mind is uncertain. Lord Wharton's first wife (Anne Wharton, the poetess) was also a granddaughter of Sir Francis Henry Lee and his spouse, but that relationship seems immaterial to the occasion. It is also true that Lord Wharton's second wife was the daughter of Adam Loftus, Viscount Lisburne, but his title became extinct upon his death at the siege of Limerick in 1691; the husband of Rochester's daughter was Viscount Lisburne by a creation of 5 June 1695. I have discovered no kinship between the last and the present holder of that title.

Lady Orford is the wife of Edward Russell, first Earl of Orford (1652–1727), better known perhaps as Admiral Russell, the victor at La Hogue. The Duke of Shrewsbury is Charles Talbot, the first duke (1660–1718). The lord chancellor is the celebrated Lord Somers (1651–1716). Mrs. Barry's list of sponsors, however, seems incorrect, possibly because of a subsequent change of plan; according to Narcissus Luttrell (iv. 469), the king and the Duke of Shrewsbury were the godfathers and the Princess Anne the godmother. The duke, the lord chancellor, and Lord Orford were all political allies of Lord Wharton, a sporting peer who was at this time comptroller of the royal household. The boy about to be baptized under such august auspices turned out to be the rakehell Duke of Wharton.

There is a slight discrepancy between the dates given by Mrs. Barry for the marriage and the baptism and those given by the *Complete Peerage* and the *D.N.B.* (2d, 5th). In 1699, 5 January fell on a Thursday; "tuesday last" would therefore be the third and "friday next" the following day, the sixth. The fact that Mrs.

Barry first dated her letter the fourth and then wrote a 5 over the numeral sheds no light on this point. It is hard to say which witness is the more likely to be wrong.

Of the plays which Mrs. Barry mentions, *Rinaldo and Armida* is an "opera," *i.e.*, a tragedy with a generous allotment of incidental music, by John Dennis. It was probably brought out at Lincoln's Inn Fields early in the current season; it was printed in 1699. Mrs. Barry played Armida to Betterton's Rinaldo. If there could be any doubt about the identification, it would be dispelled by the fact that the poet does give Armida command over the elements and indeed over the infernal regions, a proviso Mrs. Barry forgot to mention to Lady Lisburne (pp. 15 f.):

And thou, O Air, that murmur'st on the Mountain,
Be hush'd at my Command, Silence ye Winds,
That make outrageous War upon the Ocean;
And thou, old Ocean, lull thy wond'ring Waves;
Ye Warring Elements be hush'd as Death,
While I impose my Dread Commands on Hell.

"Alexander" I take to be *The Rival Queens, or, the Death of Alexander the Great*, by Nathaniel Lee, a favorite of long standing frequently mentioned by its alternative title. One would not think it eminently suitable to a wedding, but then there is the precedent of a tragedy of Pyramus and Thisbe to give one pause.

The contents of Mrs. Barry's letter, which so far as I can learn has never before been printed, are of moderate interest only, but it deserves notice as a memento of a great actress of an era whose actresses did not leave many mementos of this kind behind them. I may add that, if Mrs. Barry composed the letter herself, she wrote with a fluency which is a little surprising, and that, while she almost completely disdains punctuation, her spelling is remarkably modern.

BENJAMIN FRANKLIN'S *POLITICAL, MISCELLANEOUS AND PHILOSOPHICAL PIECES*, 1779¹

Edwin Wolf, 2nd

HISTORICAL NOTES

IN 1774 the publisher Newbery issued the fifth edition of Benjamin Franklin's *Experiments and Observations on Electricity . . . To Which Are Added, Letters and Papers on Philosophical Subjects*. No doubt the success of that volume and the interest in it, combined with his personal admiration for Franklin and his sympathy with the American cause, stimulated Benjamin Vaughan a few years later to plan a companion volume which would collect in print Franklin's political works. Exactly when he decided on it and obtained the author's permission we do not know, for the Franklin-Vaughan correspondence as it is extant in various libraries is obviously not complete.² There are, however, enough letters to enable us to trace the development of the project in outline at least.

By the end of 1776 the volume was almost ready for publication, including only political pieces, and apparently not all of those which were later printed. The earliest reference to it is a rather oblique one contained in a letter from Vaughan to Franklin of December 29, 1776.

B Vaughan presents his best respects to D^r: Franklin and incloses him some papers for perusal *at his leisure* . . . Begging you not to be alarmed about the mention of an appendix (which I will hereafter explain to you) and entreating your forgiveness for all my liberties . . .³

It must have been shortly thereafter that Vaughan sent the printed sheets with a more detailed explanation. Unfortunately, Ford, who quotes the letter, does not give its date and I have not located the original.

Before you open this collection of your writings, I must entreat you to hear a few words of apology. My first idea was to collect into one body

the several writings which I saw dispersed in different places, so as to form a manual to answer the purposes of the day. Consistently with *this* purpose, I thought I might add a few temporary notes. This idea lasted through the first 50 pages, and I was only checked in it by the sudden appearance of others of your pieces, which I had not before known. Then it was I saw that I had engaged in something likely to be more than fugitive, and began to be more sparing of my own impertinences . . . Upon a review of the printed pages, I had decided to destroy the whole impression, and wrote Johnson to this effect; but as he told me that he could with the utmost ease cancel the exceptional pages . . . I determined to let the whole lie by me for some time.⁴

By January 27, 1777, he had arrived at a decision.

Upon a reconsideration of the matter I shall cancel the whole impression of your political works, and wait for the additional pieces. I shall then have it in my power to give a new arrangement, with a total omission of all notes, excepting such as mark the periods of publication and the like . . . But you will please to recollect, that I have not yet got your remarks upon *paper currency*.⁵

Here then is an account of an actual printing, totally destroyed, of which nothing remains but the above references.

There were probably other factors than those mentioned which persuaded Vaughan to postpone his plan. It was more than daring, almost foolhardy, to honor in England a rebel American who had just helped draft and had signed the nefarious Declaration of Independence. Respected though Franklin was as a scientist and tolerant though the English might have been toward contrary opinions, the appearance of the book in 1776–77 might have been a little too much for them to stomach. Perhaps Vaughan realized this,⁶ and could not offend Franklin by saying so. Another factor may have been the easy accessibility of Franklin himself.⁷ As long as he was in America, correspondence had been virtually impossible; with Franklin in France the matter became simple and his active collaboration could be expected. Perhaps Vaughan decided against the papers which Franklin had not had a chance to correct, and in favor of a volume which could claim the great man's imprimatur.

In any event, the project lay dormant for some time, and even if no letters are extant on that theme, it may well be understood that during the hectic first half of 1777, Franklin was more

occupied with official matters at the Court of France than with collecting and revising new material for Vaughan. When Vaughan came to Paris in September 1777,⁸ and met Franklin secretly in a public bath, the whole project was probably discussed and new plans agreed upon. By spring or summer of 1778 they were well under way again, and Franklin had begun to send additional material to Vaughan. An undated letter, certainly written some time in the second quarter of 1778, announces definite preparations:

. . . we shall be content to go on with what you have got; and the sooner it comes the better on account of the season, when the press is more at leisure than during the winter.—The paper on *vis inertiae* and that on the alphabet⁹ will not I hope among the rest escape you.¹⁰

On August 1, 1778, Vaughan acknowledged receipt of the new pieces, but recorded the opinion of the publisher Johnson that the time for publication was still not ripe.

. . . I am most thankful for that [paper on *vis inertiae*] and the rest; some of which I never saw before, and are therefore new treasures. Johnson however advises me to wait some very short space, before we begin anew.¹¹

It must have been some time late in the year that Vaughan finally sent for approval the inclusive plan for the volume. An undated memorandum in his autograph sets forth the “Present intended order of publication,”¹² including substantially all the pieces printed in the first four sections of the 1779 volume, but containing only the essays on *vis inertiae*, the new alphabet, and the epitaph¹³ among the “Miscellaneous and Philosophical Pieces.” A note added to this section is of interest.

There might be added here the philosophical papers &c, not printed by Newberry, but for this must talk with Newberry, as his edition may be nearly sold off, and it will come better there.¹⁴

Apparently Newbery was not interested, for the other three papers eventually added were of a scientific nature.

In the spring of 1779 the printing got under way, and from April on, in spite of a state of war between England and France, there are fairly complete records of the progress of the book. On

April 9th Vaughan sent Franklin the proofs of the first two thirds of the text.

By this conveyance you will receive a printed packet of your papers; & inclosed you will receive what is finished in addition. The last proof sheet comes down to p. 320.—I believe in the whole, there will be from 450 to 500 pages; exclusive of index, table of contents, and two or three pages of *explanatory* preface.¹⁵

The work was progressing steadily, and on April 30th Vaughan wrote again:

I sent you a packet with a number of sheets of your printed papers; which I suppose you have received, though as yet I have not had it signified to me. I send you more sheets which now lie by me; and have still another or two finished which I believe are with the printer. I send you also all that I have written out of my remarks on *motion* &c &c: it contains a part of my annotations only, on M^r Baxter, for I mean him another sentence or two; and it does not go down to the place where I give an apology to you.¹⁶

Franklin's approval of what he had seen went off on May 5th.

I received my very dear Friend's Letter of the 9th April, with the Packet accompanying it. I leave the whole Management of that Edition in your Hands with great Confidence, as I am sure my Pieces will be improv'd by your Attention to the Matters you mention.¹⁷

By the end of the month the text was ready down to about page 418, but Vaughan had not yet received all the approved copy. Franklin had delivered a paper on the Aurora Borealis before the Academie Royale in the early spring,¹⁸ and this was to be included, as well as his preface to Galloway's Speech¹⁹ and the Epitaph, which had been planned for but not yet sent off in completed form. On May 31st Vaughan spoke of completion in sight:

I have no pretensions to trouble the person affording me this conveyance with a large packet, otherwise I might send you more sheets. We are indeed just finished; only that I have expectations of procuring your preface to M^r Galway's speech, and in consequence the epitaph; all which can very easily be inserted. Your paper on the *Auroras* I can give no greater praise to, than by saying it is *your own*. . . .²⁰

Soon thereafter all Franklin's material was in Vaughan's hands, but the editor had yet to complete his notes. On June 17th he

told Franklin that he hoped to send him “every thing complete” in about three weeks.²¹ On the strength of this statement Smyth said that the book was published in July,²² but on July 6th Vaughan wrote that he was still working on the notes for the Aurora,²³ and apparently on July 30th he sent them to Franklin, with the comment, “I guess you will not be displeased with what follows your Aurora Borealis.”²⁴

Finally, on September 20th, Vaughan considered the volume ready for publication, and asked Franklin’s advice about it:

By the present opportunity I wish to inquire your opinion as to the *time of appearance*. I am for the present moment; the bookseller for deferring: But as my opinion will rule, I wish without giving reasons, you would express a hint which way I ought to give that opinion.—As to a neat bound-up copy, you shall shortly have one; but at present the time is too short.²⁵

The printer must have been annoyed. After the text came an appendix, and then of course the index, but last-minute changes had to be incorporated in “Addenda & Corrigenda,”²⁶ and at the same time three leaves were ordered cancelled, chiefly, as will be noted below, to tone down the language of a few notes. Yet Vaughan was still busy emending the emendations, and one plate and the very last leaf were still to be cancelled to make some corrections in the note there. At this point, on October 10th, he wrote:

By this time you will have received your own papers, all but a material sentence or two in the Addenda & Corrigenda, and a corrected plate of Cotopaxi, taken from Bouguer, who differs somewhat from Ulloa I find, but still more from the English translator of Ulloa who makes sad *confusion & mistake*, such as would have misled men more accurate than myself.—But I have a singular confirmation in the interim from Bouguer.²⁷

Franklin had not apparently answered Vaughan’s letters as they came, but on November 9th he answered the question asked by Vaughan in September:

I have received several kind Letters from you which I have not regularly answered. . . . I thank you much for the great Care and Pains you have taken in regulating & correcting the Edition of those Papers. . . . In looking them over, I have noted some Faults of Impression that

hurt the Sense, and some other little Matters, which you will find all in a Sheet under the title of *Errata*. You can best judge whether it may be worth while to add any of them to the *Errata* already printed, or whether it may not be as well to reserve the whole for Correction in another Edition, if such should ever be . . . As to the *Time* of publishing, of which you ask my Opinion I am not furnish'd with any Reasons or Ideas of Reasons on which to form any Opinion. Naturally I should suppose the Bookseller to be from Experience the best Judge, and I should be for leaving it to him.²⁸

Franklin's errata there mentioned were not printed in the edition. The book was published the end of November or in December 1779. At any rate, by January it was in the hands of a reader who wrote Vaughan on January 27, 1780, thanking him for the copy sent and asking the extent of Franklin's authorship of the Canada pamphlet.²⁹ It was reviewed in the March issue of *The Monthly Review*, where the prices of the two issues were given as "8vo. 6s in Boards; or in 4to to match the Author's Philosophical Papers, 10s. 6d. in Boards."³⁰ Such is the information concerning the book obtained from external sources; a few more details can be learned from a bibliographical examination.

BIBLIOGRAPHICAL NOTES

Bibliographically the Vaughan *Franklin* of 1779 presents several rather interesting points. There are two issues of the edition, one printed in octavo and the other in quarto. Each page in both issues, with the exceptions noted below, was printed from the same type. However, each page was re-imposed, and the signatures changed to match the format. Furthermore, as can readily be seen in the copies in original boards, the octavo edition was printed in octavo formes, and the quarto in quarto formes. Commenting on such procedure, Bowers writes:

A difficult problem is met with when identical type-pages are re-arranged from one format to another for further impression and, presumably, simultaneous sale. This is not usually a problem of standing type since under ordinary circumstances the re-imposition of the type-pages was made immediately after a sheet in the first format was printed. Hence both were on the press at substantially the same time; the only priority would be that of printing, and even then only of precedence in the final sheet through the press. Moreover, under ordinary

circumstances there is little or no question of resetting or alteration in the text except for possible press-correction between re-impositions, although there may occasionally be slight differences in the preliminaries according as the second contracts or expands the space available in the preliminary sheet or sheets.³¹

The present book then is a typical case in point. Only four pages were reset, the two-line note on p. [xii] and the half-titles on pp. [83], [385] and [465], all so thin in body that they may well have dropped out and pied in the transfer from one chase to another.

Williams³² believes, on the basis of some books examined, that the smaller format usually went through the press first in the manner described above, and Bowers³³ has proven that this was the order of the octavo and quarto issues of Kirkman's *The Wits*, Part II (1673), similarly printed. Assuming then that the octavo was first imposed and first printed, the procedure may have been somewhat as follows. The text begins with B of the octavo, and the inner forme of that gathering would be the first finished by the compositor, so it could be first through the press. As soon as that was printed the pages for the inner formes of B and C of the quarto would be ready for re-imposition, and printing in that format could begin on a second press. As soon as the octavo B was perfected with the outer forme, the outer formes of the quarto B and C would be ready. Since fewer copies of the larger paper issue would ordinarily be printed, two formes of the quarto (if the number published were half the octavo³⁴) would take the same press time as one forme of the octavo, and the printing could continue smoothly. If the quarto were printed first, a complete forme for the octavo would not be ready until three quarto formes had been printed, and hence this method would not be as practical.

Conclusive evidence I have not found to establish the limited priority of the octavo, but there are indications which make it seem probable. The headlines, frequently the best clue to such a matter, were changed for every individual essay and hence clear skeleton patterns are not available. In most cases the same skeleton was used for both formats, but this is not invariable, and can, I think, have been the result of difficulty in transfer from one

chase to another when the loosening of the furniture may have resulted in the breaking up of occasional headlines. One peculiarity is to the point. The headline of the cancellandum p. [573] has the misprint AEDENDA in the octavo, which was corrected in the quarto cancellandum.

I have not, so far, collated the text of the quarto and octavo to discover if there may have been press corrections made in the course of printing, which might help establish the priority of issues. But two catchwords, incorrect in the octavo, have been corrected in the quarto—*The* on C4^r of the octavo reads THE on D4^r of the quarto, and respectively making on Dd6^v reads “making on Ggg2^v. Of more significance, however, is a peculiarity found only in the quarto issue.³⁵ The original leaves Uuu4 and Xxx1 have been cancelled, and only stubs remain. In their place a half-sheet, conjugate as would be expected, has been inserted containing the text of those two leaves. The cancellans Uuu4 is the only fourth leaf of a gathering signed. For a possible explanation I am indebted to Dr. Bowers³⁶ who suggested that pages available from the octavo, including half of those for both Uuu and Xxx, may have been wrongly imposed in the quarto, so that a page of Xxx1 was printed on Uuu4 or vice versa, forcing the cancellation of both leaves. This could only have occurred if the octavo had been first through the press. So far no examples of the cancellanda have been found, so that this must remain supposition only.

It was at this point, probably in late July or August while Vaughan was still working and reworking his notes for the essay on the Aurora and editing the material in the “Appendix,” that regular printing procedure was upset. There would seem to have been two reasons for the break, the mix-up in Uuu and Xxx and the fact that copy was not ready for continuous composition. In order not to lose too much time, the printer decided to go ahead with the title page and preliminary matter instead of waiting as usual until the end of the volume had been completed. There is no conclusive evidence that this was done in the octavo, but in the quarto the first six leaves, as all the text from B to Xxx, are printed on regular quarto paper with the chain lines running horizontally; all the cancellans and Yyy to the end are on paper

with vertical chain lines. Furthermore, the page number for the Epitaph in the table of contents, which would not yet have been printed, seems to have been added in some irregular manner afterwards. A note on the verso of the sixth leaf calls attention to the “Appendix” and “Addenda” at the end in lieu of inclusion in the table.

Then further complications arose, for the editor wanted some changes made in pages already printed, requiring the extra printing of cancellans leaves. Fortunately all of these are extant in the octavo, but not in the quarto, in both the cancellandum and cancellans states, with the cancellans found at least once in their original positions as printed.³⁷ The cancellanda are invariably torn through to indicate cancellation, and remain only because of oversight on the part of the binder. First, it was decided to cancel pages 195–6 and 205–6 (O2 and O7 in the octavo, Cc2 and Dd3 in the quarto). The printer was then faced with the need for two extra leaves in the octavo and four in the quarto to include Uuu4 and Xxx1 as well. The revised pages were prepared, and the octavo cancellans for the conjugates O2.O7 were printed with the preliminaries as the conjugates A4.A5. A similar half-sheet, available in b of the quarto, would not satisfy the need, and b was apparently left as a half-sheet.

There was no more of the regular quarto paper available by this time, and the printer began to use paper of a poorer quality with chain lines running vertically, as though he had cut down regular octavo paper to quarto size. The first printing with this new paper was probably a full sheet containing the cancellans Uuu4, Xxx1, Cc2 and Dd3, the first two printed as conjugates. No copies of the cancellans Cc2 and Dd3 are extant in their original position, so this is a surmise only. The original sheets of Uuu and Xxx had been on the first paper, but from Yyy on the second was used.

Even then the changes were not complete. Vaughan wanted pages 341–2 (Z3 in the octavo, Xx3 in the quarto) cancelled, and, after the “Addenda” was set, the final leaf in the last sheet (Oo8 in the octavo, 4D4 in the quarto) remained blank and became available for the cancellans. The printer must have been frantic, for with the type for the next to last leaf still standing, Vaughan

asked that it too be cancelled, and a leaf was separately printed as cancellans with the standing type of the next to last page and reset type for the last page. At last the book was ready, with four cancels in the octavo, and six in the quarto.³⁸

There only remains to note the type of change which caused the cancellation.³⁹ All the significant changes occurred in Vaughan's notes, and all except the last page, where new material was added, toned down somewhat the language of his original. That he was somewhat scornful of criticism for his pro-American views and proud of his friendship with Franklin is obvious from the fact of the edition itself. He even included among Franklin's honors on the title page that he was "Minister Plenipotentiary at the Court of France for the United States of America," the existence of which was not recognized by Great Britain. Yet perhaps he, perhaps the publisher, felt that no face would be lost and some trouble avoided by speaking of the "strange fatality," rather than "monstrous absurdity" of the plans of the ministers with regard to Canada, saying that the Board of Trade had joined in the "opposition" to the issuance of paper-money rather than in the "clamor" about it, and calling Wedderburn's followers "supporters" rather than "abettors."

At first it seemed to me that surviving cancellanda might be comparatively common, because four of the twelve copies seen at the American Philosophical Society and Yale retained one or more of them.⁴⁰ However, not one was found in the next sixteen copies reported on, so that it may be assumed that only the very exceptional chance copy will have one. The original cancellanda Uuu4 and Xxx1 of the quarto are yet to be discovered.⁴¹

NOTES

1. I am indebted to my colleague, William McCarthy, who started me on this paper, by calling to my attention cancellanda in a copy formerly in the possession of The Rosenbach Company, and now in the American Philosophical Society Library (PPAmP). To Dr. William E. Lingelbach I am also particularly grateful for his interest and help as well as that of his staff. Although he is presently working on the Vaughan Papers recently acquired by the American

Philosophical Society, he has graciously permitted me to go ahead with this specialized paper.

2. The bulk of the Vaughan Papers are now in PPAmP, but are chiefly of a later date. It is possible that material pertinent to the present subject may have been lost in the fire which is known to have destroyed many of Vaughan's MSS in the house of his son-in-law.
3. Franklin Papers, Library of Congress (DLC), no. 303, from microfilm in PPAmP.
4. Paul Leicester Ford, *Franklin Bibliography*, Brooklyn, 1889, no. 342.
5. Franklin Papers, PPAmP, V, 36. *Remarks and Facts Relative to the American Paper-Money* was printed on pp. 206–221 (ed. 1779).
6. That Vaughan was aware of this even later is evident from his note to three 1775 letters added in the appendix, p. 550 (ed. 1779): "I run much risque in the publication of the three following Letters; but I think they contain such valuable facts, and shew so well the nature of Dr. Franklin's temper, that I ought to encounter some difficulty rather than suffer them to be lost."
7. Franklin landed in France on December 3, 1776.
8. Carl Van Doren, *Benjamin Franklin's Autobiographical Writings*, New York, 1945, p. 429.
9. *On the Vis Inertiae of Matter*, pp. 479–486, and *A Scheme for a New Alphabet*, pp. 467–478 (ed. 1779).
10. Franklin Papers, PPAmP, XLII, 115. Several undated pieces are to be found together under this number.
11. *Ibid.*, PPAmP, XI, 3.
12. *Ibid.*, PPAmP, XLII, 115.
13. *The Author's Epitaph on Himself*, p. 531 (ed. 1779).
14. Franklin Papers, PPAmP, XLII, 115.
15. *Ibid.*, PPAmP, XIV, 21. P. 320 completes sheet X in the octavo, Ss in the quarto.
16. *Ibid.*, PPAmP, XIV, 74. The latter part refers to the paper on *vis inertiae*, which was written "In a Letter to Mr. Baxter."
17. *Ibid.*, DLC, no. 528, from microfilm in PPAmP.
18. *Suppositions and Conjectures towards Forming an Hypothesis, for the Explanation of the Aurora Borealis*, pp. 504–509 (ed. 1779). On December

- 7, 1778, Franklin had sent his paper to the Abbé de La Roche. The original MS is among the Franklin Papers, DLC, no. 503; and no. 508 is Vaughan's copy.
19. *Preface by a Member of the Pennsylvanian Assembly to the Speech of Joseph Galloway, Esq.*, pp. 418–464 (ed. 1779).
 20. Franklin Papers, PPAmP, XIV, 148.
 21. *Ibid.*, PPAmP, XIV, 190.
 22. Albert Henry Smyth (ed.), *The Writings of Benjamin Franklin*, New York, 1907, v. I, p. 20.
 23. Franklin Papers, PPAmP, XV, 24. Vaughan's notes occupy considerably more space than Franklin's text, running on pp. 510–530 (ed. 1779). The last note is dated July 1779.
 24. *Ibid.*, PPAmP, XV, 89.
 25. *Ibid.*, PPAmP, XV, 204.
 26. The *Appendix* is on pp. 533–556; the *Index*, pp. 557–565; and the *Addenda & Corrigenda*, pp. 567–574 (ed. 1779).
 27. Franklin Papers, PPAmP, XVI, 25. The plate is the engraving facing p. 522. The last sheet could not have been printed before September, because on the last page there is a reference to *London Gazette*, of Sept. 4, 1779.
 28. Franklin Papers, DLC, no. 567, from microfilm in PPAmP.
 29. Francis Maseres to Benjamin Vaughan, Franklin Papers, DLC, no. 574.
 30. *The Monthly Review*, London, 1780, v. LXII, p. 194.
 31. Fredson Bowers, *Principles of Bibliographical Description*, Princeton, 1949, p. 103. I follow Dr. Bowers in calling the two formats "issues" of an edition, and am grateful to him for suggestions made in this section.
 32. Iolo A. Williams, *Points in Eighteenth-Century Verse*, London, 1934, pp. 33–34.
 33. Fredson Bowers, "The Wits," in Strickland Gibson, "A Bibliography of Francis Kirkman," *Oxford Bibliographical Society Publications, New Series*, I (2) for 1947, Oxford, 1949.
 34. This would ordinarily be a high percentage of large paper copies, but it must be remembered that the quarto in this case was issued to complement the quarto Newbery *Experiments*, 1774.

35. My thanks are due to Miss Dorothy Bridgwater, of Yale University Library, for checking these leaves so carefully in the two copies in original boards in that library. The cancels are not apparent in copies bound in calf which I have examined, but they are in the Pennsylvania Historical Society Library (PHi) copy 2; see note 40.
36. In a letter to me.
37. See note 40 for list of copies checked.
38. The collation is as follows:— 8vo:a⁸(—a4.5)B—N⁸O⁸(±O2.7 [=a4.5])P—Y⁸Z⁸(±Z3[=Oo8])Aa—Nn⁸Oo⁸(±Oo7,—Oo8);4to: a⁴b²B—Bb⁴Cc⁴(±Cc2)Dd⁴(±Dd3)Ee—Vv⁴Xx⁴(±Xx3[=4D4]) Yy—Tt⁴Uuu⁴(±Uuu4)Xxx⁴(±Xxx1)Yyy—Zzz⁴4A—4C⁴4D⁴(±4D3,—4D4); *plates and insets*: frontispiece, printed table (opp. p.470), 3 plates (opp.pp.487, 510, and 522).
39. The significant variations between cancellandum and cancellans are as follows:
p. 195, note, lines 24/25: the/monstrous absurdity—the strange fatality/; p. 205, catchword: *The—Remarks*; p. 206, note, line 10: in this clamor—in this opposition; p. 341, throughout: Wedderburne—Wedderburn; p. 341, note, lines 39/40: The view of these pleadings was evident; and for a time they/worked their effect—These pleadings for a time worked great effect; p. 342, note, lines 13/14: same person—same/source; lines 19–21: Wed-/derburne: And perhaps it will cost them little trouble to prove that/they ought to remain perfectly contented with each other—Wedderburn; line 29: his abettors—(27) his supporters; p. (574), line 14 to end: or may not the eruption by some thought in some measure to contribute/to the wind?—See the plate from Bouguer; the London Gazette for Sept. 4, 1779;/and Brydone's Tour through Sicily and Malta, Vol. I, p. 215, and 227–8; With/the confirmations given by Sir Wm. Hamilton in Phil. Trans. for 1768, p. 11,/and 1770, p. 18. E.)—may not the eruption by rendering the air lighter in consequence of rare-/faction, phlogistication, &c. or the *cold high land in its neighborhood* by making the/vaporous air shrink greatly in consequence of precipitating its vapor (as seen in/certain elevations upon AEtna and still more upon the Andes) *contribute to the wind.*—/Finally, if the insulated smoke be negative with respect to electricity, is there any/contradiction in supposing that it may occasionally receive its complement from/the upper regions; the electricity in its circuitous passage thither for the purpose,/forming a new species of auroras.—See the plate from Bouguer; the London Gazette/for Sept. 4, 1779; and Brydone's Tour through Sicily and Malta, Vol. I, p. 215, and 227–8; With the confirmation given by Sir Wm. Hamilton in the

Phil. Trans./for 1768, p. 11, and 1770, p. 18. and Ulloa, Vol. I. p. 321. E.)/*N.B.* The collection in this Volume includes all/the *Political* Pieces by Dr. Franklin which have by any/means come into the Editor's possession, and such of/his *Miscellaneous* and *Philosophical* pieces as are not/*elsewhere* extant in print.

40. Of the copies examined four are erratic: Yale University Library (CtY1, Mason-Franklin 302-1779), 8vo, boards, uncut, O2 and O7 cancellanda (cancellans not present), Z3 and Oo7 cancellans; CtY2 (Mason-Franklin 302-1779a), 8vo, contemporary sheep, O2 and O7 cancellans, Z3 and Oo7 both cancellanda and cancellans; PPAmP1 (973-F85p7), 8vo, boards, uncut, O2 and O7 both cancellanda and cancellans, Z3 and Oo7 cancellans; PPAmP2 (973-F85p2), 4to, contemporary calf, Cc2, Dd3 and Xx3 cancellans, Oo7 cancellandum. All the rest contain only the cancellans: CtY3 (Presentation copy to Cabanis-Mason-Franklin 467-1779b), 4to, boards, uncut; CtY4 (Mason-Franklin 302-1779b), 4to, boards, uncut; CtY5 (Wagner-NZ779f), 8vo, boards, uncut; PPAmP3 (973-F85p6), 8vo, old half sheep; PPAmP4 (973-F85p4), 8vo, contemporary calf; PPAmP5 (973-F85p5), 8vo, contemporary half calf; PPAmP6 (973-F85p1), 8vo, contemporary sheep; PPAmP7 (973-F85p3), 4to, contemporary calf; University of Pennsylvania Library (PU, *AC7.F8542.B779p), 8vo, contemporary calf; New York Public Library (NN1, Astor-KF), 8vo, half cloth; NN2 (Myers-KF), 8vo, 19th century marbled parchment; NN3 (Berg), 8vo, original boards, uncut; NN4 (Duyckinck-KF), 4to, contemporary calf; NN5 (Presentation copy to Batavian Society-KF), 4to, contemporary calf, t.e.g., other edges uncut; PHi1 (Af14), 8vo, half blue morocco; PHi2 (Franklin [?]-Bache-Kirkland), 4to, original boards, uncut; DLC1 (Jefferson-E302.F83.1779), 8vo, calf; DLC2 (Stevens-E302.F83.1779), 4to, blue morocco; DLC3 (E302.F83.1779), 4to, marbled paper; Harvard University Library (MH1, *42-693), 8vo, contemporary calf; MH2 (US4532.7A), 8vo, half calf; MH3 (US4532.7B), 8vo, contemporary calf; MH4 (Business School), 8vo, half calf; William L. Clements Library (MiU-C), 4to, old calf. I am greatly obliged to members of the staffs of the above libraries for either checking themselves or making available to me these copies.
41. It should be noted that a copy of the quarto issue bound in old calf in the Parke-Bernet catalogue of the sale of Mrs. Henry Walters, April 23, 1941, lot 519, is described with pp. 57-8 on a cancel. I found no such cancel in copies of the quarto in original boards, and suppose, until contraverted, that a leaf removed was replaced.

AN EARLY AMERICAN

“Discourse on the Connexion Between Chemistry and Medicine” *

Herbert S. Klickstein

IN the early nineteenth century, the importance of chemistry to medicine was questioned by many of the medical faculty at the University of Pennsylvania.¹ The Board of Trustees had before it in 1809 a resolution that the professorships of natural history, botany, and chemistry “should not hereafter be considered as pertaining to the Medical Department of the Faculty, although gentlemen of the medical profession are and shall continue eligible to those professorships.”² Probably the death of James Woodhouse (June 4, 1809), Professor of Chemistry, was the reason for this petition, for the election of his successor was then under consideration.³ This proposal met with the opposition of others of the faculty of medicine, particularly Rush, Wistar, Barton and Physick,⁴ who presented their views in a letter to the trustees.⁵

It is particularly expedient that the Professor of Chemistry should have a full and extensive knowledge of Medicine, because very many valuable articles of the *Materia Medica* are derived from Chemistry; and the nature of these articles can only be understood by a person who has a competent knowledge both of Chemistry and Medicine. The students of Medicine, who almost exclusively support the Professorship of Chemistry, are induced to do so in consequence of its application to Pharmacy and the different branches of Medicine, viz., Physiology, Pathology, Therapeutics, *Materia Medica*, and the Practice of Physic. No man can teach Pharmacy unless he has had some knowledge of the Practice of Medicine, and the application of Chemistry to Physiology; and the other branches of medical science above mentioned can only be taught by a chemist who understands them.

* * *

We beg leave again to suggest that our Professor of Chemistry has always taken an active part in the business of the Medical Faculty,

* The Charles W. Burr prize essay in the History of Medicine, 1950, University of Pennsylvania School of Medicine.

judging of the qualifications of the respective candidates in every branch of their profession, and examining Inaugural Theses on subjects relating to Medicine.

The resolution was rejected, and John Redman Coxe was elected to the vacant chair on July 10, 1809.⁶ But the differences in opinion as to the place of chemistry in medicine were not resolved by his election, for on his transfer to the professorship of *materia medica* some nine years later, the arguments broke out anew. At this time several opinions were advanced by the medical faculty. First, that the chair of chemistry need not be occupied by a medical man, for it should be separated from the faculty of medicine. Dorsey, Professor of *Materia Medica* (he had succeeded Barton), was a strong advocate of this approach. Another group felt that only one who had received a medical education should be appointed to the chair of chemistry for it was his duty, as a professor in the medical faculty, to pass upon the merits of candidates for a “degree in medicine.” Chapman, who was Professor of the Theory and Practice of Medicine, of Institutes, and Clinical Medicine, went still further and since he “considered chemical knowledge rather as an ornamental than an indispensable, or even useful part of medical education, he thought the chair of chemistry ought to be separated from the medical faculty; and that the students should be exonerated from the *necessity* of attending to this branch of knowledge, when they had so many other branches to attend to, which were absolutely indispensable.”⁷ Rush, Wistar and Barton, who had stressed the need of chemistry in medicine previously, had died since the election of Coxe in 1809. With the opposition for the most part gone, it was not difficult for Chapman and others of the faculty to press their convictions. This they did to the extent of persuading Robert Hare, who was elected to the vacant chair of chemistry (September 18, 1818), to relinquish his privilege of judging the qualifications of the medical students when they were examined for their degrees.⁸ He also agreed not to sign their diplomas, “confining himself simply to the examination of the students—in chemistry only—the rest of the faculty, reserving to themselves the exclusive right of deciding upon the result of such examination, which was to take place in their presence.”⁷ The chair of chemistry, although

retained in the medical faculty, was relegated, therefore, to one of little importance. Nor was this general feeling of the inutility of chemistry to medicine confined only to the medical faculty of the University, for there were others who supported Chapman. One of the foremost of this faction was Charles Caldwell, who at that time was Professor of Natural History.¹⁰ Shortly after the election of Hare, Caldwell made a violent attack on the use of chemistry to medicine in a lecture at the Medical School (November, 1818). The following extract is from this caustic tirade⁹:

To some of you, it may, perhaps, appear extraordinary, that I have represented chemistry, as only a collateral element of medicine. It is, however, indisputably, nothing more. When strictly scrutinised, I am at a loss to perceive, wherein it is more intimately connected with medical science, than zoology, botany, or mineralogy. Nor can I recognize any propriety in the expression, "medical chemistry," beyond that of "medical botany, zoology, or mineralogy." The three departments of nature, to which those branches of science relate, furnish the physician with many of his remedies: and, with an immediate reference to his profession, chemistry, unquestionably, does nothing more.

Shall I be told, that chemistry aids, in the explication of any of the phenomena or laws of the living body, either in a healthy or a diseased state?—that it sheds light on physiology, pathology, or therapeutics? From the most correct and satisfactory views I have been able to form on this subject, I feel myself compelled to deny the position. As far as chemistry has mingled in discussions of this nature, it has not only darkened them, but filled them with error. It has superadded corruption to what it found already sufficiently corrupt.

The answer to this ridicule was a brilliant lecture delivered at the University of Pennsylvania by Thomas Cooper, on November 5, 1818, and published shortly after its presentation by Abraham Small as a pamphlet entitled *A Discourse on the Connexion between Chemistry and Medicine*.¹¹ It is a valuable document, for not only does it summarize the dissension among the medical faculty, but it presents in a lucid and concise manner the many relationships of chemistry and medicine as understood at this period. Cooper also discusses in a forward-looking manner the needs of a medical curriculum; his ideas in some respects are not unlike those now prevalent. *A Discourse on the Connexion between Chemistry and Medicine* is then of considerable interest and is worthy of a more comprehensive analysis than has hitherto been given it.

Thomas Cooper¹² was, when he wrote his *Discourse*, Professor of Chemistry in the Faculty of Arts in the University of Pennsylvania. Born in London (1759), he was educated at Oxford University, where he studied law and medicine. With a colorful background in both England and France, Cooper came to America (1793). Here he first settled in Northumberland, Pennsylvania, where he lived for a time with Joseph Priestley.¹³ For a number of years he practiced law, attended to the sick, and pursued his many scientific interests. In 1811 he was appointed to the chair of chemistry at Dickinson College (Carlisle, Pennsylvania), a turning point in his career, for he soon began to contribute seriously to chemistry, education, and industry. His *Introductory Lecture* at Dickinson¹⁴ evidences a fundamental knowledge of chemistry. While at Dickinson, Cooper made several notable contributions to scientific literature. He edited, in 1814, the second American edition of Frederick Accum's *System of Theoretical and Practical Chemistry*.¹⁵ The appendix written by Cooper is a summary of the discoveries in chemistry which had occurred since the last edition (1807). *A Practical Treatise on Dyeing and Callicoe Printing*, which he termed "upon the whole, the best book on the subject of dyeing and printing now extant,"¹⁶ followed in 1815. From 1813 to 1814 Thomas Cooper also served as the editor of the *Emporium of Arts and Sciences*, a journal devoted to the arts and manufactures.¹⁷ Cooper was by creed a materialist, which was the cause of continual antagonism throughout his life. In many ways it seriously hampered his academic career and was contributory to his resignation from Dickinson in 1815. The following year he was appointed to the chair of chemistry at the University of Pennsylvania. While in Philadelphia, Cooper continued his scientific work, published his efforts in journals or as texts, e.g., *Some Information concerning Gas Lights* (1816). He also edited in 1818, the year of publication of the *Discourse*, revised editions of Jane Marcet's *Conversations on Chemistry*¹⁸ and Thomas Thomson's *A System of Chemistry*.¹⁹ All of these works clearly show that Cooper had an extensive acquaintance with chemistry, a knowledge that gained the respect of his contemporaries. On the resignation of John Redman Coxe from the chair of chemistry in the Medical School, Cooper applied for the vacancy, as did Hare and others.

In a letter to the trustees, Cooper outlined his broad training in chemistry, but of more interest, his medical background, not readily ascertainable in other sources.¹² Quoting from this letter, dated August 4, 1818,²⁰ we read:

In London, I attended the Anatomical Lectures of Mr. Sheldon of Great Queen Street. I attended also a clinical course at the Middlesex Hospital. I attended at my leisure hours, the patients of Dr. Ferriar of Manchester under his direction. I have practised openly and avowedly as a Physician in this country, for a longer time than any present member of the Medical faculty of this University.

After listing his further work in medicine, Cooper concludes:

I therefore have a just right to be considered as a Physician, not only by formal title honourably acquired, but by regular course of study, by long experience and extensive practice.

Robert Hare was elected to the chair, to the disapproval of Cooper, who publicly expressed himself against the medical faculty in his lecture and in the subsequently published *Discourse*. It is not so much a personal document vindicating himself, but rather an answer to those who found no usefulness in chemistry as applied to medicine. The broad background of Thomas Cooper in both chemistry and medicine provided him with an approach possessed by few in Philadelphia at this time.

In his letter to the trustees, quoted in part above, Thomas Cooper refers to a "formal title honourably acquired." This was an honorary degree of Doctor in Medicine from the University of New York, the first academic degree he had received.²¹ It was to the "Trustees and Professors" of this institution that he dedicated *A Discourse on the Connexion between Chemistry and Medicine*, stating:

I DO not submit to your consideration the following discourse, because I suppose the connexion between chemistry and medicine is not duly appreciated and well taught in your University—for, while my excellent friend, Dr. M'Neven, fills the chair of chemistry, all that is necessary to be taught in theory, and illustrated by experiment, in this department of chemical science, will be fully given. But I am anxious to seize the first public opportunity of expressing my obligations for the degree of Doctor in Medicine, which your partiality has been pleased to confer on me; and to assure you, that this public mark of approbation on your

part shall operate as a continual excitement to those exertions by which it has been earned.

The preface to the *Discourse* (iii–xiii), which was written after the lecture was delivered, contains an interesting discussion of the importance of chemistry, particularly medical chemistry. Cooper felt that the utility of chemistry in medicine was as little realized as the importance of the classics in education. He continues, “It would be well, if we confined our neglect to ancient erudition; but the most useful parts of modern science also seem to fall into contempt here [America], in proportion as they rise in reputation elsewhere.” The arguments as to the place of chemistry in the medical curriculum of the University of Pennsylvania are then briefly presented, with the conclusion that it is held of little use in medicine by the majority of the medical faculty. “In this state of things,” Cooper feels justified in using his chair as Professor of Chemistry in the Faculty of Arts “to shew, that there *is* a connexion between medicine and chemistry, and to trace an outline of that connexion. It appeared to me, that the heresy in question ought to be combatted by some one, and I found no one likely to do it, if I did not.”

Thomas Cooper felt that the undervaluation of chemistry was due to the fact that “when the gentlemen who are now professors, received their medical education twenty years ago, the science of chemistry was truly of very little use or application to physiology or pathology. It is no wonder therefore that the opinion then formed of it, when they first entered on the practice of medicine, should prevail among them now—or that they should think lightly of a branch of science whose progress they have not traced, and whose present importance they are not sufficiently apprised of. How can they duly appreciate that knowledge which they have been at no pains to acquire, or inculcate its necessity upon others, when they cannot feel that necessity themselves?” He then points out that “twenty years has changed the whole face of chemistry, in its theory, in its practice, in its application.” Cooper stresses the fact that medical educators in Europe consider chemistry “as absolutely indispensable to a medical degree . . .” The effects of this lack of training in the University of Pennsylvania are presented in answer to a question—what will be the

consequence if the medical faculty continues to ignore chemistry? Cooper's logic in phrasing the answer is noteworthy:

Let us consider, what will be the consequence? The prodigious extent to which chemistry is applicable in the arts, trades, manufactures, and domestic economy of life, renders it each day more popular than the past. Every man is alive to its importance, who has an opportunity of reflecting on its uses. The students of chemistry now are confined to no class of society: it is no longer regarded merely as an ornament—an accomplishment: every body is *expected* to know somewhat about it. This progress of attention to chemical knowledge is manifestly gaining ground in this country generally. Hence, in ten years time, chemistry will be better known to every class of society in America, than it will be to the practitioners of medicine poured out from the school of Philadelphia: for at this day they are led to consider it as a very inferior branch of medical knowledge; and they see before them continually, gentlemen of acknowledged talents, who regard it in the same light. It cannot be expected that young men thus instructed should devote themselves to chemistry. But I would ask, how can a physician educated in these opinions meet a jury of his country on a case of poison, or a case of nuisance affecting the public health? How will he be able to maintain the high ground that a physician ought to take, as a member of the most scientific portion of the general community to which he belongs? He cannot.

Cooper expressed the hope that the trustees would not support the medical professors in their opinions, "opinions not founded on knowledge of the inutility of chemistry to medicine, but on ignorance of its utility," and would require a full grasp of chemistry of each medical candidate. To the objection of lack of time, a problem still of no small concern today, he suggests another year of study—predicting the four-year curriculum many years before it was instituted. He recommends that chemistry, botany, materia medica, and pharmacy should occupy the first two years, with anatomy, surgery, midwifery, and the theory and practice of physic in two additional years. How prophetic is his statement that "perhaps the present circumstances of the country will not afford a quadrennial course of study; but if the reputation of the profession is to be maintained before the public, we *must* adopt this period ultimately." After quoting from Caldwell's letter, referred to in the introductory remarks, Cooper concludes his prefatory reflections with the statement that although chemistry

as applied to medicine is still in its infancy he is confident that it is “the infancy of Hercules.”

The main body of the *Discourse*, the portion that Cooper gave in his oral presentation, covers the concluding thirty-three pages. It is divided into topics which follow a short introduction: Brief History of Medical Theories; Humoral Pathology; Application of Chemistry to Physiology; Pathology; Poisons and Nuisances; Materia Medica; Adulteration of Medicines; Pharmacy; Prescriptions; and finally the Conclusion. It is a difficult task to evaluate truly all of Cooper’s evidence as to the connection of chemistry and medicine, for in his period the sciences of bacteriology, biochemistry, pharmacology, etc., were either unknown or in their early development. Organic chemistry was still in the future (1818), yet Cooper in many instances has shrewdly correlated the then known chemical facts into many plausible explanations. The evidence is assembled and analyzed, in some instances erroneously, but in others with intuitive genius. It is from the latter group that the extracts below are for the most part taken, in order clearly to demonstrate his reasoning in the light of modern concepts. Regardless of his immediate chemical-medical hypotheses, he does unquestionably prove that the “connexion” of chemistry and medicine is a close one, and this was in reality his prime motive in presenting the interpretations.

The “Introduction” summarizes what he later enlarges on in his “Preface,” principally the lack of interest in chemistry at the University and the need for a closer union of chemistry and medicine. Cooper sketches the doctrines of medicine in a “Brief History of Medical Theories.” The schools of Cullen, Brown, and Darwin are presented, and Cooper explains that it is no surprise that with such a background the utility of chemistry to medicine is not appreciated: “Is it any wonder then, that gentlemen educated at a period when chemistry was regarded as a visionary branch of medicine, and the humoral pathology founded on it, banished from the schools by common consent, should retain their prejudices against studies that they were led to consider as useless and absurd?” A treatment of “Humoural Pathology” precedes the section on the “Application of Chemistry to Physiology.” In the latter Cooper considers the doctrines of respira-

tion, animal heat, circulating fluids, bile, urinary secretion, bones or skeleton, coats of the arteries, and of the circulating fluids generally.

Of respiration, Thomas Cooper wrote:

. . . nothing was known, until the fine experiment of Dr. Priestley, shewing the disappearance of oxygen when exposed to venous blood inclosed in a thin bladder, and the florid colour thus produced. At present, however, we know tolerably well, that the air inspired is little changed in quantity: that the oxygen is converted into carbonic acid: that a small quantity of additional moisture is contained in the expired air; and that it is thus fitted for stimulating the left ventricle of the heart. At this period, and not sooner, does the chyle assume the properties of the blood. . . . But it is certain, that the chemical formation of albumen and fibrin from their elements in the chyle, does not fully take place till this fluid be acted upon by respiration and assimilated with the blood in the arterial system. So that without a knowledge of the chemical composition of the chyle and of the blood, and the chemical effects of respiration on these fluids, we must remain in utter darkness as to the processes taking place. Whatever is known of these processes, we owe to chemistry, and to chemistry exclusively.

After a discussion of "Animal Heat," Cooper writes on blood, stating that "all we know as yet of the process of sanguification, and the contents of this compound fluid, we owe to chemical investigations. We know that it contains much albumen and fibrin, of which we can trace little in the chyle until its entrance into the left subclavian, at its junction with the carotid; and but traces of it supplied by the lymph, even there we know that the colouring matter of the blood alone absorbs oxygen. . . ." It is startling to read:

Indeed every secreting gland is a chemical laboratory; nor is it possible to refer the changes that take place in the fluid that enters a gland, to any other than chemical and galvanic agency: for decomposition takes place, new compositions appear, with perfectly different properties, and with different chemical elements, and caloric is given out in almost every case. We know that the play of chemical affinities can do this, and we know of no other power competent to it. These changes constitute the essential character of chemical affinity.

In some ways Cooper has here anticipated the science of endocrinology. After a treatment of "Bile," the *Discourse* considers

“Urine.” Here Cooper feels: “To chemistry, we owe our knowledge of the general composition of healthy urine: and to chemistry, we owe all that is known of the variations that take place when urine is secreted, either from animal fluids that are morbid stimuli, or by morbid action of the kidneys from healthy fluids.” He discusses urine analysis and its importance to medicine in a concise but lucid manner.

When we find this secretion composed of urea, of uric acid, of muriatic, lactic, and phosphoric acids, of combinations of these in the form of saline neutrals with soda, potash, magnesia, lime, ammonia,—and in disease, albumen, gelatin, mucus, and sugar—and that these vary in their proportions according to the state of sickness or health of the person secreting this fluid—when we have no means of ascertaining the differences of its composition but chemical analysis—and when those differences indicate various conditions of health or disease, we may surely be permitted to say that an accurate knowledge of animal chemistry is indeed necessary to the medical profession.

Cooper concludes his section on the application of chemistry to physiology with the topics “Of the Bones,” “Of the Arterial Coats” and “Of the Circulating Fluids Generally.”

The application of chemistry to pathology is next treated by Cooper, who uses a few examples to prove his contentions. He discusses bilious and yellow fevers, dyspepsia, dysentery, chlorosis, hemorrhoid, hysteria, gout, diabetes mellitus, phthisis and rachitis. In the summary of gout Cooper writes:

All that we know of the composition and formation of these productions of gout and gravel, we owe to chemistry alone: and, cathartics excepted, all the remedies hitherto suggested, have been furnished by chemistry, on chemical considerations: the same may be said not merely of the remedies but of the prophylactics also. In fact, without chemistry, nothing would have been known of the theory or the cure of gout, stone, and gravel . . .

Vitamins were unknown when Thomas Cooper stated: “In rachitis we know that a due proportion of phosphate of lime is not secreted and deposited where nature calls for it; but I dare not say that chemistry has yet discovered the remedy, though she has made us better acquainted with the disease.”

The subject of “Poisons” is considered next. Cooper emphasizes that chemistry has provided medicine with all it knows about

their composition and action. He justly questions, "Are there any means, except those which Chemistry affords, of alleviating the sufferings of a poisoned patient during life, or of detecting the nature of the poison after death?" The legal ramifications of poisoning are stressed, with the responsibility of the physician in all such instances indicated. The application of medical chemistry to industrial hazards is alluded to under "the legal doctrine of nuisance!" Most such legal discussions, Cooper states, "are chemical: and the questions asked relate for the most part to medical chemistry." "Materia Medica" is presented in part by a summary on remedies. Here Cooper asks, "Is it possible for a physician to prescribe satisfactory to himself or to his patient, who is unacquainted with the medicine he thinks fit to prescribe?" He continues: "Are they not all chemical preparations, acting as chemical stimuli to the living fibre, and undergoing themselves chemical changes within the body—changes that vary with the condition of the body itself and its fluid contents?" It is with justification that he questions, "Can a physician safely tamper with chemical remedies, who is himself ignorant of chemistry?"

After outlining the application of a knowledge of chemistry to the detection of adulterations of medicines Cooper examines "Pharmacy" and "Prescriptions," his last topic before concluding the *Discourse*. This he presents in a conclusive fashion.

. . . suppose a physician well grounded in the essential doctrines of life and disease, so far as they are dependent upon the properties of the living solid: suppose his medicines good, and the indications by which his prescriptions are to be guided, clear and unambiguous—I deny that he is fully competent to prescribe, unless he be also well versed in medical chemistry. Two remedies, each of them answering a manifest indication and proper for the disease, may destroy each other's efficacy when compounded. For instance, the sulphate of soda is a very common cathartic: prepared chalk, prescribed as an absorbent, acts also as a cathartic: when mixed together, they will form a compound perfectly inert as a medicine, and a deleterious load in the stomach . . . Sublimed oxide of zinc is a safe and mild tonic: so is oxide of bismuth: so is sulphuric acid; but the combinations of sulphuric acid with these substances rank among the poisonous emetics.

Cooper therefore feels that for effective prescriptions the medical man must be familiar with chemistry.

In summarizing his final arguments, Cooper again reiterates that “It is not possible for a physician to stir in his practice without employing his knowledge of medical chemistry if he has it, or without lamenting the want of it, if he have it not.” Cooper points to the recognition of the “connexion of chemistry with medicine” in Europe and again asks, “Is this the favorable opportunity to decry the study of it here? to deny the necessary connexion of chemistry with medicine, and to regard it merely as an ornamental branch of medical education? Is this the time, when the obsolete arguments of twenty years back, are to be brought forward as the medical axioms of the present day?” The pamphlet concludes with the following.

I hope, however, that on this subject I have been able to produce facts and arguments of sufficient cogency, to shew, that whatever might have been the state of medical chemistry when my contemporaries were young, it holds a present rank among the branches of useful science with claims far superior, and too imperious to be slighted: and that I do not express myself too strongly when I say, that it is a branch of science INDISPENSIBLE to medicine.

From the preceding, it is evident that *A Discourse on the Connexion between Chemistry and Medicine* was a persuasive document based on a broad and thorough grounding in chemistry and medicine. But of more importance is the question of its impact. What was the effect of this pamphlet on the medical faculty and the position of chemistry in the curriculum? This is difficult to ascertain, for the evidence is at best fragmentary. Another intriguing question is the influence of this prejudice against chemistry in medicine at the University of Pennsylvania on other schools of medicine, for, as Norwood²² has indicated, it was “the progenitor of a group of schools which sprang up throughout the country during the first and second quarters of the [19th] century. Not a little of the history of medical education of the time pertains to the direct and indirect influence of the University of Pennsylvania.” This problem, however, is beyond the scope of this paper.

In the year following the publication of the *Discourse*, Thomas Cooper edited his *Tracts on Medical Jurisprudence*.²³ From the preface to this work it is seen that the situation at the University had not changed.

Kessler's case in New-York State, will serve to put Courts and Juries on their guard against the imperfect knowledge of Chemical Subjects, so disgracefully common among the Medical Profession in our country at the present day. I wish I could say that the subject of *Medical Chemistry* received its due share of attention in the University of Pennsylvania, but I cannot. In the present state of general knowledge, Juries will not be satisfied to receive from a medical witness the very slight information he may have brought away from the place where he received his medical education; and unless he attaches more importance to Medical Chemistry as he grows older, than he is taught to connect with it here, he incurs the hazard of finding more knowledge of the subject, among those who are not of the profession, than he possesses himself.

In 1820, Cooper resigned his professorship at the University of Pennsylvania. He went to the College of South Carolina and was elected President and Professor of Chemistry of the institution. Neither in his *Introductory Lecture on Chemistry*²⁴ at the College of South Carolina nor in his subsequent publications²⁵ are there any further references to the controversy at the Medical School of the University of Pennsylvania.

There appeared in 1835 a small volume entitled *An Appeal to the Public and Especially to the Medical Public from the Proceedings of the Trustees of the University of Pennsylvania Vacating the Chair of Materia Medica*, (Philadelphia) by John Redman Coxe. It was Coxe's public plea against his removal from the chair on a charge of incompetence.⁶ In it he quotes extensively from Cooper's *Discourse*, referring to it as a "work of infinite merit." It is all too evident from Coxe's defence that the medical faculty, and the trustees as well, held chemistry in no higher esteem as to its connection with medicine than in 1818. It seems, therefore, that Thomas Cooper's work had had little effect. Nor did the situation change by 1857, for otherwise Robert Hare, then Emeritus Professor of Chemistry of the University of Pennsylvania, would not have felt constrained to submit the following to a medical convention²⁶:

Pathology, therapeutics, surgery, materia medica, and midwifery, are of the most immediate importance to the healing art, chemistry and anatomy being useful only so far as they are subservient to the branches thus enumerated.

Nevertheless, as chemistry and anatomy are among the fundamental branches of medical science, any attempt to give a medical education in

which they should be neglected, would be like attempting to erect a superstructure without a basement.

Hare warns that "those who are authorized to grant medical degrees, ought not to leave it to the option of the students, whether or not to be ignorant of chemistry," and hopes "that the medical profession will feel it to be their duty, to use all their influence to induce the medical schools of the country to deny a medical diploma to those whose knowledge of chemistry is below mediocrity." There were some then who carried on Cooper's fundamental tenets.²⁷

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BIBLIOGRAPHICAL NOTES

1. The following sources were used, in part, for the background material concerning the early history of the University of Pennsylvania School of Medicine (College of Philadelphia, University of the State of Pennsylvania):

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2. Carson, *op. cit.*, p. 109.

3. Smith, E. F., *James Woodhouse, A Pioneer in Chemistry, 1770-1809*, Philadelphia, 1918.

For the early history of chemistry at the University of Pennsylvania, see:

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Hepburn, J. S., "Smith and Morgan, Our First Chemists," *The General Magazine and Historical Chronicle*, XXXV, 491-510 (1933).

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4. Benjamin Rush (1746–1813) Professor of the Institutes and Practice of Medicine; Caspar Wistar (1761–1818), Professor of Anatomy; Benjamin S. Barton (1766–1815), Professor of Materia Medica; Philip S. Physick (1768–1837), Professor of Surgery.

Benjamin Rush was one of the first noteworthy teachers of chemistry in America. He was appointed Professor of Chemistry in the College of Philadelphia (August 1, 1769), and became the first incumbent of an American chair devoted exclusively to chemistry. Rush wrote a *Syllabus of a Course of Lectures on Chemistry*, Philadelphia, 1770, the first textbook on chemistry published in this country. On his resignation to accept the chair of theory and practice he was succeeded by Caspar Wistar who later became Professor of Anatomy (1792). Their experience in both chemistry and medicine explains, in part, the letter that was sent to the trustees protesting the resolution to separate chemistry from the medical faculty.

5. Carson, *op. cit.*, pp. 108–9.
6. John Redman Coxe (1773–1864). On July 7, 1818, he was transferred from chemistry to materia medica. He held the chair of materia medica until 1835, when it was declared vacant by the trustees. The action of the trustees resulted from a protest by the students against Coxe as an instructor.
7. *A Discourse on the Connexion between Chemistry and Medicine*. p. v. See Reference 11 for full description.
8. For full details of the election of Hare to the chair of chemistry see Edgar F. Smith's *The Life of Robert Hare, an American Chemist (1781–1858)*, Philadelphia, 1917, pp. 57–64.
9. *A Discourse on the Connexion between Chemistry and Medicine*, p. xii.
10. The professorship of natural history was established on October 4, 1816, by the Board of Trustees of the University of Pennsylvania, as a part of a new Faculty of Natural Sciences. It was abolished as a part of the medical faculty.
Charles Caldwell (1772–1853) was a pupil of Rush, but his overwhelming self-confidence and self-assertiveness aroused not only the antagonism of Rush but of the trustees as well. He has left a valuable autobiography which Osler in his *Aequanimitas (Aequanimitas, with other Addresses to Medical Students, Nurses and Practitioners of Medicine)*, London, 1904, p. 324) writes of as a “storehouse of facts (and fancies!) relating to the University of Pennsylvania, to Rush

and to the early days of the Transylvania University and the Cincinnati schools. Pickled, as it is, in vinegar, the work is sure to survive."

Autobiography of Charles Caldwell, M.D., with a Preface, Notes, and Appendix, by Harriot W. Warner, Philadelphia, 1855.

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It is a rare pamphlet. Three copies are in Philadelphia libraries: University of Pennsylvania, Edgar Fahs Smith Memorial Library in the History of Chemistry; Historical Society of Pennsylvania; Library Company of Philadelphia, Ridgway Library.
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12. For a full account of Thomas Cooper consult:
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Malone, D., *The Public Life of Thomas Cooper, 1783-1839*, New Haven, 1926.
Armstrong, E. V., "Thomas Cooper as an Itinerant Chemist," *J. Chem. Education*, XIV, 153-158 (1937).
Caldwell, C., *op. cit.*
13. Smith, E. F., *Priestley in America, 1794-1804*, Philadelphia, 1920.
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Cooper was later to contribute to the memoirs of Priestley, *Memoirs of Dr. Joseph Priestley, to the Year 1795, Written by Himself; with a Continuation, to the Time of His Decease, by His Son, Joseph Priestley; and Observations on His Writings, by Thomas Cooper, President Judge of the 4th District of Pennsylvania, and the Rev. William Christie*, Northumberland, 1806. 2 v.
14. *The Introductory Lecture, of Thomas Cooper, Esq. Professor of Chemistry at Carlisle [Dickinson] College Pennsylvania*. Carlisle, Published at the request of the Trustees, with Notes and References, 1812.
15. *System of Theoretical and Practical Chemistry, by Frederick Accum*, 2 vols. Second American Edition, by Thomas Cooper, Philadelphia, 1814.
For a delightful discussion of this volume, see Edgar F. Smith's *Old Chemistries*, New York, 1927, pp. 55-57.
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19. Thomson, T., *A System of Chemistry*, Philadelphia, 1818, 4 vols. from the fifth London edition, with notes by Thomas Cooper. For full bibliographical details see Klickstein, H. S., “Thomas Thomson, Pioneer Historian of Chemistry,” *Chymia*, I, 37–53 (1948).
20. Reprinted in full in Smith’s *The Life of Robert Hare*, pp. 58–61.
21. Malone, *op. cit.*, p. 231.
22. Norwood, *op. cit.*, p. 85.
23. *Tracts on Medical Jurisprudence. Including Farr’s Elements of Medical Jurisprudence, Dease’s Remarks on Medical Jurisprudence, Male’s Epitome of Juridical or Forensic Medicine, and Haslam’s Treatise on Insanity, with A Preface, Notes, and a Digest of the Law Relating to Insanity and Nuisance by Thomas Cooper, Esq. M.D.*, Philadelphia, 1819.
24. *Introductory Lecture on Chemistry*, delivered at the College of South Carolina, in Columbia, January 1820. Columbia, 1820.
25. Consult Malone, *op. cit.*, for complete bibliography of Thomas Cooper’s publications.
26. Smith, E. F., *Life of Robert Hare*, pp. 485–488.
27. It is noteworthy that Charles Caldwell, who had been so bitter against chemistry as applied to medicine, was little persuaded by Cooper’s arguments. In 1843 he wrote a pamphlet entitled *Physiology Vindicated in a Critique on Liebig’s “Animal Chemistry”* (Jeffersonville) in which he displays little deviation from his 1818 beliefs. Yet he was very warm toward Cooper in his *Autobiography* (p. 338), writing, “In talents, attainments, and general character, Dr. Cooper was one of the most extraordinary men of his day.” A defence of Liebig’s work is to be found in a *Review of Dr. Caldwell’s Pamphlet Entitled “Physiology Vindicated, in a Critique on Liebig’s ‘Animal Chemistry,’ ”* by Robert Peter (Cincinnati, 1843), a work not unlike Cooper’s in approach and logic.

A MYROUR TO LEWDE MEN AND WYMMEN

A Note on a Recently Acquired Manuscript

Edna V. Stover

ONE of the favorite types of literature in mediaeval England was the omnibus of religion. Such a work is the *Speculum Vitae*, a vernacular manual of religion written in verse which, within the framework of an exposition of the Lord's Prayer, covers the whole range of orthodox religious teaching as it existed toward the end of the fourteenth century. In an article written for the *Publications of the Modern Language Association* some years ago, Hope Emily Allen dealt with a prose version of this treatise, entitled *Myroure to Lewde Men and Wymmen*. This was known to Miss Allen in three manuscripts: British Museum MS. Harl.45; and Oxford, Bodleian, MS. e. Mus.35 and MS. Rawl. A.356.

Up to the present time these have been the only manuscripts of the prose *Myroure* known to be extant. It is therefore a matter of considerable consequence that in the spring of last year the University of Pennsylvania Library acquired from a London bookseller a fourth manuscript which is now housed in its Rare Book Collection. The Library is justly proud of this addition to its manuscript resources.

The *Myroure to Lewde* Men and Wymmen* is, as the title indicates, a manual for the instruction of the ignorant. It is an attempt to convey the basic elements of the Christian faith in one book, in simple prose that even the unlearned can understand. Since Old English times, both secular and religious leaders had been lamenting or condemning the ignorance of those intrusted with the spiritual welfare of the people. A well-known churchman of the latter part of the twelfth century, Giraldus Cambrensis, tells the story of an ignorant priest who, in preaching about the Canaanite woman, remarked that she was part woman and part

* Meaning "ignorant."

dog—thus blundering because he had been unable to distinguish between the words *Canaanite* and *canine*! As late as 1357 the bishop of Exeter complained that clerks did not understand the meaning of the texts used in celebrating matins, the hours of the Virgin, etc. In the last quarter of the thirteenth century an effort was made to remedy this distressing ignorance on the part of some members of the clergy. Archbishop Peckham, in his *Constitutions* of 1281, commanded that each parish priest, four times a year, explain to the people in the vulgar tongue the articles of the faith, the ten commandments, the two precepts of the Gospel, the seven works of mercy, the seven deadly sins, the seven cardinal virtues, and the seven sacraments. This command led to a whole new curriculum of religious instruction. Manuals of religion were written, some in Latin and some in English, attempting to fulfill the requirements of Peckham's ordinance. Among these manuals were the *Speculum Vitae*, written in English verse, perhaps by William of Nassyngton, advocate in an ecclesiastical court in York, and the anonymous prose work, the *Myroure to Lewde Men and Wymmen*.

In beauty of execution the Pennsylvania manuscript ranks high. It is handsomely written on vellum, numbers 168 folios, and is bound in late eighteenth century calf. It lacks folio 137, but is otherwise complete. Latin words within the text and Latin marginal notations are written in red. Capital letters are shaded with red. Paragraph marks are either blue on a background of red, or gold on a background of purple. There are ninety-one illuminated initials separating the main divisions in the text. These initials are of gold on a background of blue and magenta. Issuing from the top and bottom of each initial are delicately drawn tendrils of leaves, sometimes filled in with green and terminating in gold buds. The first folio recto is enclosed within a decorated border of intertwining branches of foliage, rather heavily executed in blue, gold, green, and magenta and terminating in the delicately drawn leaf motif which is to be found in connection with the illuminated initials throughout the remainder of the volume.

Among the four known manuscripts of the *Myroure*, that of the University of Pennsylvania Library is unique in its pen and ink

drawings. It contains at appropriate places in the margin eleven well-executed drawings—thumbnail sketches one might call them—sometimes whimsical, always charming, and always fitting admirably with the didactic purpose of the text. They are drawn to catch the eye, and, like the marginal notations, help to outline the text. A four-cornered castle epitomizes the four cardinal virtues; a tiny loaf of bread calls to mind the fourth petition of the Lord's Prayer—"Give us this day our daily bread"; seven eyes are drawn opposite the seven "cleer sightes" by which the virtue of equity may be attained; a moneybag is symbolic of the sin of avarice; a finely drawn veiled head of a woman illustrates a discussion of widowhood; and so forth.

The sketches are interesting not only because of the delicacy and skill with which they are executed, but also because many of them, even the still-life subjects, are conceived naturalistically. The tree bows; the fish is in the process of being caught on a hook; the pitcher tips so that water issues from its spout. The worm, that favorite mediaeval metaphor of man in his earthly role, wriggles and smirks.

Finally, the spirit of the drawings harmonizes well with that of the text, for there are many thumbnail sketches in words. There is the candle which lights a hall full of men and seems brighter than the candle which serves but one (fol. 6)—illustrating the "largesse" of God, who would rather give "to many *than* to one." There is the broken mirror, in each part of which men may see "one *thing* hole all attones," just as "god may be in many places and is all attones" (fol. 14). In a vivid image the slothful man is caustically compared to "*the* deueles bolster or his couche that he resteth him on" (fol. 50).

These and other little pictures in both drawings and text helped to make the lessons of the *Myroure* more understandable to the mediaeval reader. There remains to determine the place of this text in literary history.

We have already pointed out that the *Myroure* is similar in content to a teaching manual which was written to help preachers comply with Archbishop Peckham's ordinance to explain to the people four times a year the basic elements of Christian doctrine. The *Myroure* does not have an immediate relationship, however,

with Peckham's ordinance for it is the prose offspring of the poetic *Speculum Vitae*. The paternity of the *Speculum* is certain, as will be shown by the present writer in a forthcoming edition of the work. There are no deviations in the prose from the verse text which cannot readily be explained, and there are many end rhymes from the *Speculum* that have been carried over into the *Myroure*. To illustrate this point a few couplets from the *Speculum* and the corresponding passages from the *Myroure* are here given in parallel columns.

| SPECULUM | MYROUR |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 1. <i>That God giueth. to his Chanouns</i> Vche day in stude. of heore comouns. | <i>that god geueth to his chanouns</i> eche day in stede of here comunes (fol. 27) |
| 2. <i>That semeth good. and delicious</i> And is ful strong and perilous. | <i>that semeth good & delicious</i> & is ouerstrong & perilous (fol. 35) |
| 3. <i>Godus word. of the mouth of Prechour</i> Is as hit were. a cler mirour. | <i>Goddes word of the mouth of the prechour</i> is as it were a clene myroure. (fol. 100) |
| 4. <i>Abouen. the Comun Coroune of blis.</i> <i>That God hath graunted. to alle his.</i> | <i>aboue the comoun crowne of blisse</i> <i>that god hath graunted to all his.</i> (fol. 128) |

Altogether there are at least one hundred such instances in which the prose version has followed the poem so faithfully that the end rhymes have been kept.

With the *Speculum* clearly established as the source of the *Myroure*, it is easy enough to determine the closeness of the Pennsylvania manuscript to the original. A line-by-line collation of the four prose manuscripts with the Vernon manuscript of the *Speculum Vitae* reveals that the Harleian and Pennsylvania manuscripts belong to the same family, and are closest to the source. Of these two the text of the Harleian manuscript is the better, since it is more complete and contains fewer mistakes. The Pennsylvania manuscript, however, is so similar in every detail that it may be safely classified as a close relative. This conclusion is consistent with the palaeographical evidence. The Harleian manuscript has been assigned by the Keeper of Manuscripts of the British Museum to the first half of the fifteenth century, and this is the same period in which the Pennsylvania manuscript can with considerable confidence be placed.

The reduction of a poem to prose is an unusual technique in Middle English literature, for whereas in the thirteenth and fourteenth centuries it was the fashion for French writers to write “desrimé,” and whereas in the fifteenth century in England there was a growing tendency to write original works in prose rather than in verse, very few other instances can be cited in Middle English literature of verse so directly converted into prose.

The *Myrour* occupies an interesting place in literary history by reason of its content as well as its technique. In the process of conveying religious doctrine to the unlearned, the author of the *Myrour* delves into the daily lives of the people in such a way as to create unforgettable pictures of mediaeval life. For the modern reader the early history of capitalism as reflected in the discussion of “oker” or usury (fol. 62–64) has a particular interest. At that time the making of a profit in buying and selling and the levying of interest in money-lending were practiced, but they were not sanctioned by the Church. In the opinion of the mediaeval Church, the man who accepted interest for the lending of money might be damned forever in Hell. The man who sold corn at a higher price because the buyer did not make an immediate cash payment for it was guilty of usury and would be damned unless he made amendment. The seller who raised his price because he saw that the prospective buyer had a special need for his goods was guilty of usury. All these points are developed in the manual with force and pungency.

Of perennial interest are the passages on dress. In one passage women are told how they should dress when they go to church. A woman should be “simple in appearance, that is to say, meek and modest, and no affectation seek nor devise for their heads, as braids, fillets, and other such wretchedness, as many fools do that stretch the neck as a hart or burden the neck as a horse” (slightly modernized; fol. 113).

Perhaps the oldest form of character sketch to be met with in English literature is the personification of a vice or a virtue. There are many such portraits in the *Myrour*, some of which have retained their effectiveness down the ages. Hypocrisy, in all its forms, is one of the vices the anonymous author most loves to satirize. An interesting personification of this vice is portrayed

in the man who is ashamed to do well “in sight of men,” lest men call him “ypocrite” (fol. 38). Such a man, if he be with men who overeat and overdrink, will himself do likewise—for no other reason than that he may be considered a good fellow and not “singular,” and that men call him not “ypocrite or a papelard [i.e., deceiver]” (fol. 142). Such men delight in boasting that they are evil so that men will think them meek and like angels. But if another answers and says, “In sooth, that is so,” they will wax “wrooth & angry” (fol. 39).

The glutton also offers material for an excellent satirical portrait, and with this representation of him on a Sunday morning at church time this brief paper may well be brought to an end, though it would be easy to illustrate the *Myroure* as a reflection of mediaeval life with many other examples. (We quote directly but with slightly modernized wording):

“God bids him arise early out of his bed and go to church to the service of God. The belly says, ‘Nay, that may not be done, for I am so full of meat and drink undigested that I must abide till I have sweat and better slept, for the church will abide until I come.’ And when such a one that is ruled by the belly rises from his bed, he begins not to say his matins or other prayers, but anon he asks what he shall eat and what he shall drink and whether any such meat or drink may be found that he may delight in. After matins he begins lauds thus, ‘Lord, we had yesterday good meat and drink.’ And afterward he waxes sorry and says thus, ‘The wine that we drank last night was so strong that it made my head ache all night so that I was nigh dead and am yet as heavy as lead, and my head is so dazed that I am not of might to go or ride no ways till I have drunk once or twice’” (fol. 138–139).

LA LEGIENDA DI SANCTA CATERINA

An Unrecorded Incunable

John Alden

THE University's indebtedness to Francis Campbell Ma-caulay for its noteworthy collection of writings of the Italian Renaissance has long been recognized. The wealth of his bequest is once more emphasized by the identification of one of its volumes as a previously unrecorded incunable. The work in question is of more than passing interest, providing as it does an example of Italian book illustration of the late fifteenth century, and of the popular devotional literature of the period.



La Legienda di Sancta Caterina, as the volume is titled, is but a slight quarto of sixteen leaves, without place, printer, or date. It is, of course, an account of the life and sufferings of Saint Catherine of Alexandria, who died, virgin and martyr, around the year 310. On the title leaf there appears a woodcut portrait of the Saint with the symbols commonly associated with her, in this case correctly, although in practice they are found attached to other saints of the same name regardless of their appropriate-

ness. Saint Catherine is thus shown crowned, with the halo of sanctity, holding a book in her left hand—she has long been held the special patron of philosophical schools—while in her right she holds a group of palm leaves. She stands against a wheel with spikes, the means of her martyrdom. The figure is rendered with considerable attention to the drapery, which is quite skillfully handled, but no effort at depicting a landscape background has been made. Surrounding the cut is a decorative panel border, so badly worn as to make the pattern virtually indistinguishable.

Typical of Florentine book publication of the period in its illustrated title leaf, the work was probably printed at Florence by Francesco di Dino, in view of the type employed. It agrees with type 114R ascribed to Dino in the *Catalogue of Books Printed in the XVth Century Now in the British Museum* (pt. VI, p. 632), comprising a large roman text type with distinct and characteristic traits. The letter *Q* appears in two forms, first on leaf a2, verso, where the bowl of the letter is tilted sharply to the right, with a long tail, set close to the following *u*. On the following page a second *Q* appears with a short bowl and tail, set well away from the *u*. The capital *A*'s have a short head-serif to the left, and the other capitals agree with the British Museum descriptions. Particularly notable is a large waved *z*, here used throughout the text, although Dino possessed the letter in a more conventional form.

To date this work with any precision is probably not possible. Dino himself, after having printed in Naples (with different types than are here present), was active in Florence from 1481 to 1497, but his use of the type of the *Legienda* began in 1487: a possible but arbitrary date of *ca.* 1492 is simply a wide approximation. Of the four editions of the legend described by Max Sander in his *Le livre à figures italien* (nos. 1804–06), two, like this, were issued without imprint or date (both, incidentally, being assigned by Sander to Florence), while of the two dated editions, one appeared in 1490 and the other in 1532. Typographically and pictorially, the decade beginning 1490 is a reasonable one.

So, a half century after being received in the Library, the *Legienda di Sancta Caterina* may now be numbered among the University's growing collection of incunabula, which, while

statistically not large, nonetheless contains many items notable for their excessive rarity. Once more it becomes necessary to cite with gratitude the benevolence of Francis Campbell Macaulay.

La Legiendā di Sancta Caterina. [Florence, Francesco di Dino, *ca.*1492?]

4to. 16 leaves. a-b³. type-page (f.5, 29 lines): 166 x 98 mm. Type :114R. Capital spaces with guide-letters. Woodcut on title.

f.1 (title):La Legiendā di Sancta Ca/terina [woodcut]. 1^v: Incomincia la vita di Sancta/Caterina; (ends 16^v): Finita la legiendā di San/cta Caterina.

Bound in modern maroon straight-grained morocco.

FRANCIS RANDOLPH PACKARD

1870-1950*

DR. FRANCIS R. PACKARD died at the Pennsylvania Hospital, to which he had devoted so much of his professional life, on April 19, from complications following a fall in his home a few weeks earlier. A favorite of Fortune, Dr. Packard was in her debt in many ways, not the least of which was that he retained his remarkable intellectual qualities unimpaired into his 81st year. Eminent and highly honored in his professional specialty, which he used to call his bread and butter, he was more enamored of his "cake"—the cultural, literary and historical aspects of medicine and of life in general. He wrote and spoke on such matters extensively and charmingly, his phenomenal memory serving him especially well in extemporaneous remarks, which, incidentally, on suitable occasions could be richly salty. His talks to medical students of this University on the history of medicine were lively and accurate; he also served on the staff of that division of the Medical School for a number of years. In addition to his participating in the affairs of the Library Company, the Corporation of the Union Library Catalogue, the Shakespeare Society, the Franklin Inn, the Historical Society of Pennsylvania, and the American Philosophical Society, he was especially devoted to the Pennsylvania Hospital and the College of Physicians of Philadelphia. At the College, as with Osler, his special interest was in the Library, which he served as a committee member and as Honorary Librarian; when money was needed to secure an unexpected rarity, he was not appealed to in vain. As President he conducted the affairs of the College wisely, and as a Life Councillor he attended meetings with great regularity up to his last illness. At the Pennsylvania Hospital he was one of three interns¹ (1894-5) and his connection with the hospital continued throughout his life, in various staff positions and eventually as Keeper of the Archives. Here, too, he was deeply

* Based on a tribute prepared for *The American Journal of the Medical Sciences*.

¹ A photograph at the Hospital shows the three interns in the bathroom doing laboratory work for the day as they shaved.

interested in the medical library, which for nearly a century had been the largest and best in the city. In World War I he served for two years in France with the Pennsylvania Hospital unit (Base Hospital 10, 16 Genl. BEF) and, according to the British procedure, went with a surgical team to a Casualty Clearing Station in times of stress.

Dr. Packard was the son of Dr. John H. Packard, himself an eminent surgeon on the staff of the Pennsylvania Hospital and onetime Vice-President of the College of Physicians. His brother, Dr. Frederick Packard, was one of the most promising of the new type of internists, but unfortunately died of typhoid fever at the age of forty. Francis, the younger brother, was graduated from the Biology Department of the University of Pennsylvania in 1889 and received his M.D. in 1892. As a widely known otolaryngologist, he was elected President of the American Otological Society in 1931, of the American Laryngological Society in 1935 and honorary member of the Academy of Stomatology.

Dr. Packard's most ambitious historical work was his *History of Medicine in the United States* (1901, 2d enlarged edition, 1919). He also wrote books on Paré, the School of Salerno, the Gold Headed Cane, *Some Account of the Pennsylvania Hospital from its First Rise to the Beginning of 1938*, a *Textbook of Diseases of the Nose, Throat and Ear* (1909), and many journal articles. He was the first and only editor of *The Annals of Medical History* which, having survived World War I, after twenty-five years as the world's leading journal of medical history succumbed to the exigencies of World War II.

Dr. Packard succeeded Dr. Alfred Stengel in 1901 as editor of *The American Journal of the Medical Sciences*, the sixth in eighty-one years. The short five and a half years of his editorship (January 1901 to July 1906) were among the most fertile five years in the history of medicine; in them a number of the basic medical sciences made their early important contributions. The theory of mutations, the sex chromosome, Landsteiner's blood groups, opsonins, the complement fixation method, anaphylaxis, the discovery of the inoculability of syphilis into apes, the trypanosome of sleeping sickness, the treponema pallidum, the Wassermann test, Gowland Hopkins' accessory food factors (vitamins), the modern study of internal secretions and the name "hormones"

itself, the electrocardiograph—all saw the light in this brief period. The orientation toward biochemistry was accelerated during these years by new societies and the creation of the three chief journals on the subject, and organization of investigative effort was promoted by the foundation of a number of Institutes (Rockefeller, Oswaldo Cruz, Lister, McCormack, Phipps, U. S. Hygienic Laboratory, etc.). Truly a prodigious record: The “Yellow Journal” under Dr. Packard’s enthusiastic young editorship kept pace with and not infrequently contributed to these advances and their applications to clinical medicine.

In Dr. Packard the University of Pennsylvania has lost one of its great alumni who through his personal charm, his interest in the University, his teaching and his general scholarship and literary ability has contributed much to the University’s lustre.

EDWARD B. KRUMBHAAR, M.D.

NOTES FROM THE RARE BOOK COLLECTION

John Alden and Thomas R. Adams

AN UNRECORDED POEM OF THOMAS D'URFEY

AMONG its acquisitions of English material of the Restoration period the Library has recently acquired a fine collection of occasional verse, bound together in a single volume containing the bookplate of George Cholmondeley, the second earl of Cholmondeley. Cholmondeley's career was devoted largely to the Army, and in course he became governor of the island of Guernsey. He was himself, nonetheless, the author of verse, and that this collection was brought together by him is probable.

The forty-one pieces range from approximately a dozen relating to the death of Charles II, and an equal number on the accession of James II, to others relating to the early reign of William and Mary. Many are extremely rare, and at least one is apparently unique. The last is at least unrecorded as a separate edition by bibliographers, and because of its importance is here described in detail:

An Ode on the Anniversary of the Queens Birth [*rule*] Written by Mr. *Thomas D'Urfey*, And Set to Musick by Mr. *Henry Purcell*, April, 30th. 1690. [*rule*] London, Printed in the Year, MDCXC.

Folio. title-leaf, [2]p. A².

Without the music by Purcell. Comprises 69 lines of verse, beginning "Arise my Muse and to thy tuneful Lyre."

GIGANTOMACHIA

The acquisition of books of the years 1681–1682 to which reference has been made in earlier issues of the *Library Chronicle* has brought to the attention of the Rare Book Collection many items which otherwise might have passed unnoticed. That exhaustive investigation has not hitherto been applied to English printing of the 1641–1700 period makes it almost a *terra incognita* of English bibliography. This is in part due to the fact that at the time the regulations of the Stationers Company forbade the printing, normally, of more than 1500 copies from a single setting of type: for a "best seller" the printer was forced to distribute his type and set the volume up in type anew. The texts and title pages of two editions may be identical; often only actual comparison of copies will reveal the difference.

Although Mr. Donald Wing in his *Short-Title Catalogue* of English books for 1641–1700 lists only one edition of a 20-page quarto pamphlet entitled *Gigantomachia* [in Greek Letters], or *A Full, and True Relation Of the Great and Bloody Fight between Three Pagan Knights, and a Christian Gyant*, the Library has recently acquired two copies which prove to be separate editions, hitherto undifferentiated. That described by Wing (entry G698) has in the imprint the statement “Printed for Richard Janeway,” while the second reads “Printed and sold by Richard Janeway.”

Consisting of two and a half sheets signed A–B⁴, C², the edition “Printed for Richard Janeway” is set in a consistent type font throughout. In that “Printed and sold by Richard Janeway” sheet A is in a type quite different in character from the other, while sheet B proves to be printed from the same setting of type as that printed *for* Janeway. Half-sheet C is in the same font as sheet B, but each copy represents a different setting of type, with minor typographical variations. The relation of the two editions offers an interesting problem for some future bibliographer.

As a work of literature the pamphlet proves amusing, if scarcely significant, consisting as it does of a versified satire on contemporary events. In one copy a manuscript notation states in a seventeenth century hand that “Ye Subject of this Poem was a supposed Drunken Scuffle between Sr. Simon Lewis, Sr. Robt Adams, Sr. Henry Bathurst & Lee a Dyer.” The fight was another incident in the rivalry between Whigs and Tories in the politics of the times. “Lee a Dyer,” a Whig who bested his three Tory opponents in the altercation described, may be tentatively identified with the individual similarly so designated, later implicated in the Rye House Plot of 1683.

WILLIAM PENN'S FIRST APPEARANCE IN PRINT

To a small but growing group of the poetical miscellanies issued by faculty and undergraduates at Oxford, compiled on various historical occasions, the recent addition of the *Epicedia Academiae Oxoniensis, in Obitum Celsissimi Principis Henrici Ducis Glocestrensis* of 1660 is doubly welcome. It is of interest, to begin with, as an example of poetry, largely in Latin, composed on the death of Henry, Duke of Gloucester, the younger brother of Charles II, who had just returned to the throne. The volume is, however, of even greater significance in that it contains a short poem by William Penn, his first known appearance in print. Penn was at the time in his first year at Christ College, from which he was to be expelled in 1662 for nonconformity. It is still somewhat difficult to envisage the founder of Pennsylvania as an Oxford undergraduate, indulging in belles-lettres, but that he should so subscribe to the custom of the time serves to make his memory a little more real.

THE CURTIS COLLECTION OF FRANKLIN IMPRINTS

The Curtis collection of books printed by Benjamin Franklin is one of the University's prized possessions. In the past year eight new items have been added which help to maintain the collection as one of the finest in the country. Two pamphlets from the period during which Franklin was apprenticed to his brother James are Thomas Prince's *A Sermon-Delivered . . . at His Ordination to the Pastoral Charge of the South Church in Boston* (Boston, 1718) and Thomas Symmes's *An Ordination Sermon Preach'd at Malden* (Boston, 1722).

Of the six other pieces printed by Franklin in Philadelphia, four are dated before 1747, the year in which David Hall entered the business and therefore the most interesting period to a Franklin collector. Franklin's *A Defence of the Rev. Mr. Hemphill's Observations* (1735) was written in support of a young Irish preacher who had displeased the local elders. Robert Dodsley's *The Art of Preaching in Imitation of Horace's Art of Poetry* (1739) has been erroneously attributed to George Smalridge. The uncut copy acquired by the Library is one of three which are recorded. Governor George Thomas's letter to the Board of Trade and Navigation complaining of the dominance of the Pennsylvania Assembly by the Quakers was printed by Franklin in 1740. It is in mint condition and is one of three recorded copies. Ralph Erskine's *A Letter . . . to the Reverend Mr. Geo. Whitefield* (1741) relates to the University, since the University's beginning can be traced to Whitefield's visit to Philadelphia in 1739.

A particularly fortunate acquisition is a small quarto reprint of the laws relating to the poor, printed in 1749. It is the only known copy, and contains manuscript records of the Overseers of the Poor for Tinicum Township in Delaware County. The last title to be acquired bears no imprint; it is the broadside *No Stamped Paper to Be Had*, issued in place of the *Pennsylvania Gazette* for November 7, 1765, to avoid paying the Stamp Tax of that year.

EARLY AMERICAN AUTOGRAPHS

Continuing a most felicitous custom of making a Christmas present to the Rare Book Collection, Mr. Seymour Adelman this past year gave to the Library a number of items including several early American manuscripts of particular interest. Among these autographs a poem by John Quincy Adams and another, Lord Morpeth's "The Use of Tears," transcribed by Dolly Madison, should be mentioned. Of importance to the University are two bills from the Trustees of 1769 and 1770, receipted by Provost William Smith.

Even more impressive, albeit not American, is an original pen and pencil drawing by Hablot K. Browne ("Phiz"), the famous illustrator

of Dickens, entitled "Toadies." Caustically satirical, the drawing was never completed, and is unpublished.

THE F. HOPKINSON SMITH COLLECTION

Francis Hopkinson Smith, American novelist of the late nineteenth century, was the great-grandson of Francis Hopkinson, the first graduate of the University of Pennsylvania, whose musical library the University received as a gift in 1949. A collection of the works of the many-sided F. Hopkinson Smith would be an ambitious undertaking. He has been variously described as an engineer, artist and writer. In addition to artistic and literary productions a collection of his works would have to include the foundation of the Statue of Liberty and Race Rock Lighthouse. The Library has felt it best to confine its efforts to his writings alone. In the past year, through the generosity of a Detroit collector, the Rare Book Collection has received an excellent collection of Smith's writings. It includes first editions (of both author and trade variety) of almost all his books. Most of the copies contain inscriptions by the author to the person who served as the model for one of the characters, and in many cases there are extended notes explaining the purpose of the book. This is indeed a welcome addition to the collections of the University, already strong in American literature.

AMERICAN EXPATRIATES

From the library of her husband, the late Maurice J. Speiser, donor of the Herbert Arnold Dreiser Collection, Mrs. Speiser has presented to the University a large number of books printed in England and on the Continent since the First World War. Through his friendships with young Americans who during that period chose to live abroad Mr. Speiser had acquired many *avant garde* writings which constitute an impressive portion of this recent gift. Such editions, printed in France, England, or Italy while their authors were still unknown, are exceedingly scarce and equally desirable when the writers have since become famous. Thus an immaculate copy of T. S. Eliot's *Prufrack*, virtually unobtainable, was more than welcome, as were three works of William Carlos Williams: his *A Novelette and Other Prose* (Toulon, 1932), *Spring and All* (Paris, 1923), and *The Tempers* (London, 1913). The literary stature of William Carlos Williams has grown greatly in recent years, and will probably continue to do so. It is perhaps unnecessary to point out that Dr. Williams is a graduate of the University's Medical School. Other authors in Mrs. Speiser's gift, though less well known, will undoubtedly figure in future literary histories of the period, among them Robert Carlton Brown, Marsden Hartley (whose *Twenty-Five Poems*, Paris, 1923, is included), and Robert McAlpin.

THE BOK DECISION

In the history of the censorship of books in America, the decision rendered this past year here in Philadelphia by Judge Curtis Bok may well take its place alongside others, such as that of Judge Woolsey relating to *Ulysses*. An example of judicial breadth of vision, Judge Bok's decision is in fact of exceptional importance as a survey of the whole field of literary censorship not only in Pennsylvania and the United States but also in England, the wellspring of our legal thinking. The outcome of the case brought distinction not only to Judge Bok but likewise to the Commonwealth of Pennsylvania.

Because of its general interest to the world of letters, Blanche and Alfred Knopf this past Christmas had the decision printed in book form by the noted Grubhorn Press of San Francisco, in a handsome format in keeping with the importance of the text. The Library is particularly grateful to Mr. and Mrs. Knopf for presenting a copy, so fitting to its collections.

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The Secretary of the Friends, Mr. Thomas R. Adams, will greatly appreciate back numbers of the *Library Chronicle*. Volumes V, nos. 1 and 4, X, no. 1, XII, no. 2 and XIV, no. 1 are now out of print. Many others are nearly exhausted.

